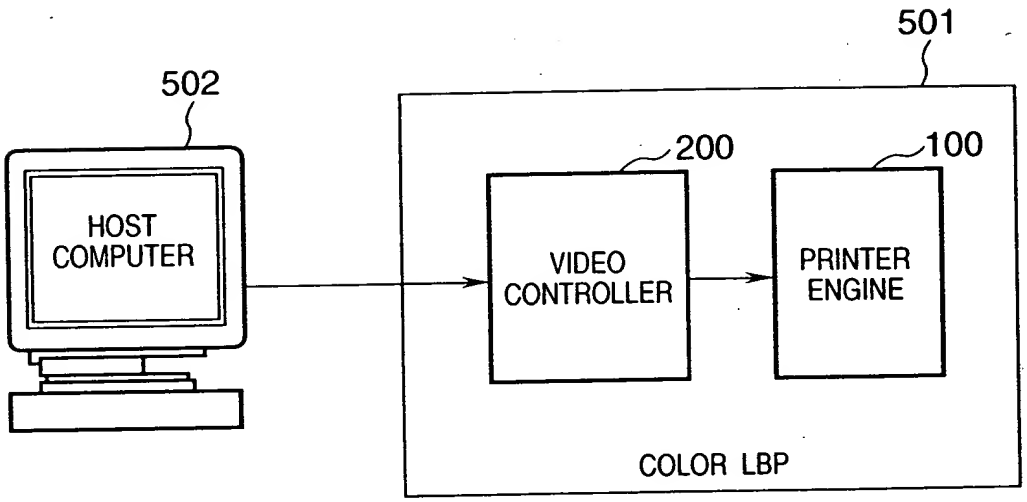
APPROVED BY EXAMINER O.G. FIG. CLASS SUBCLASS

FIG. 1

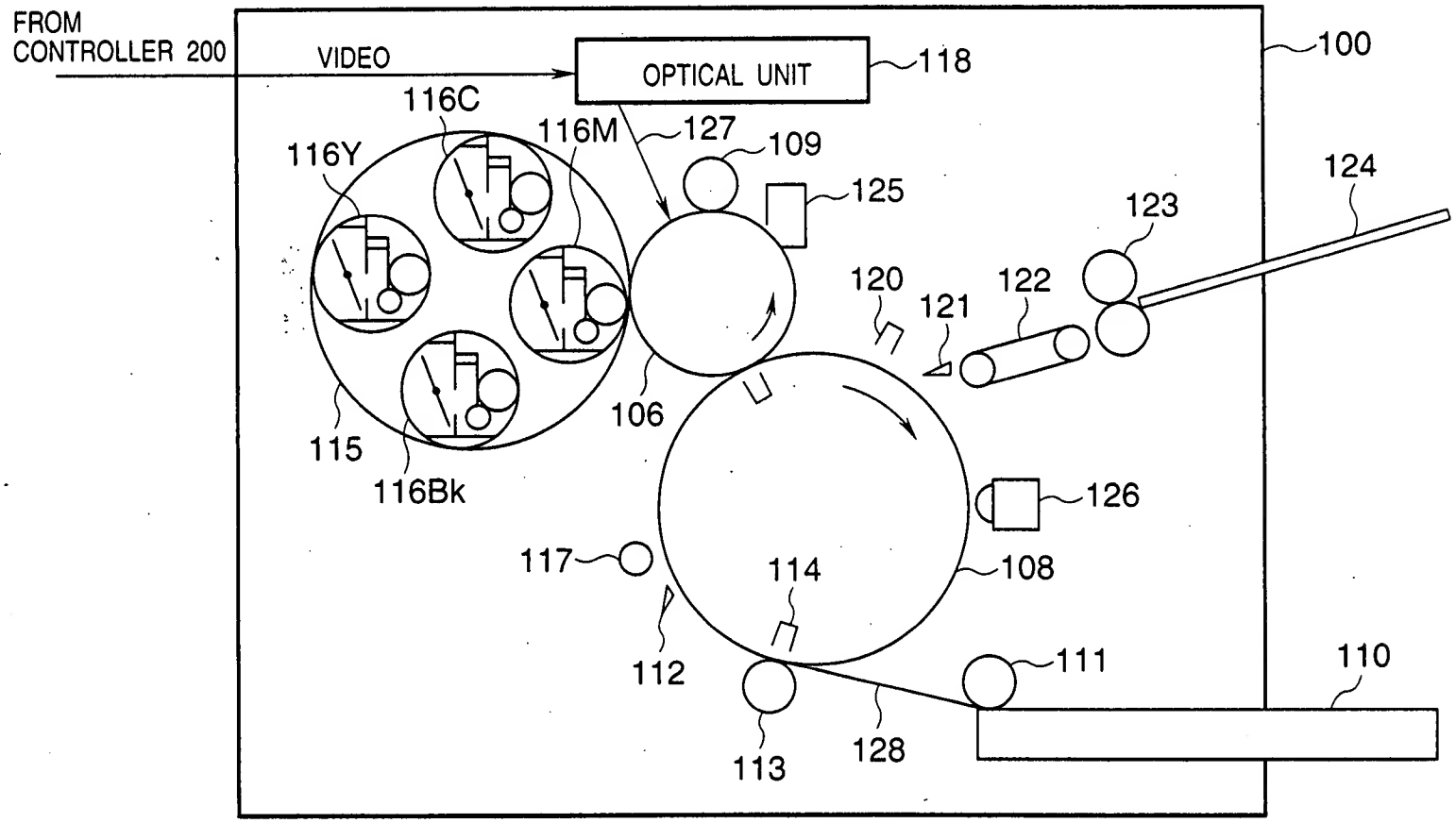


UNDECIDED 6,362,510

006220 6969560

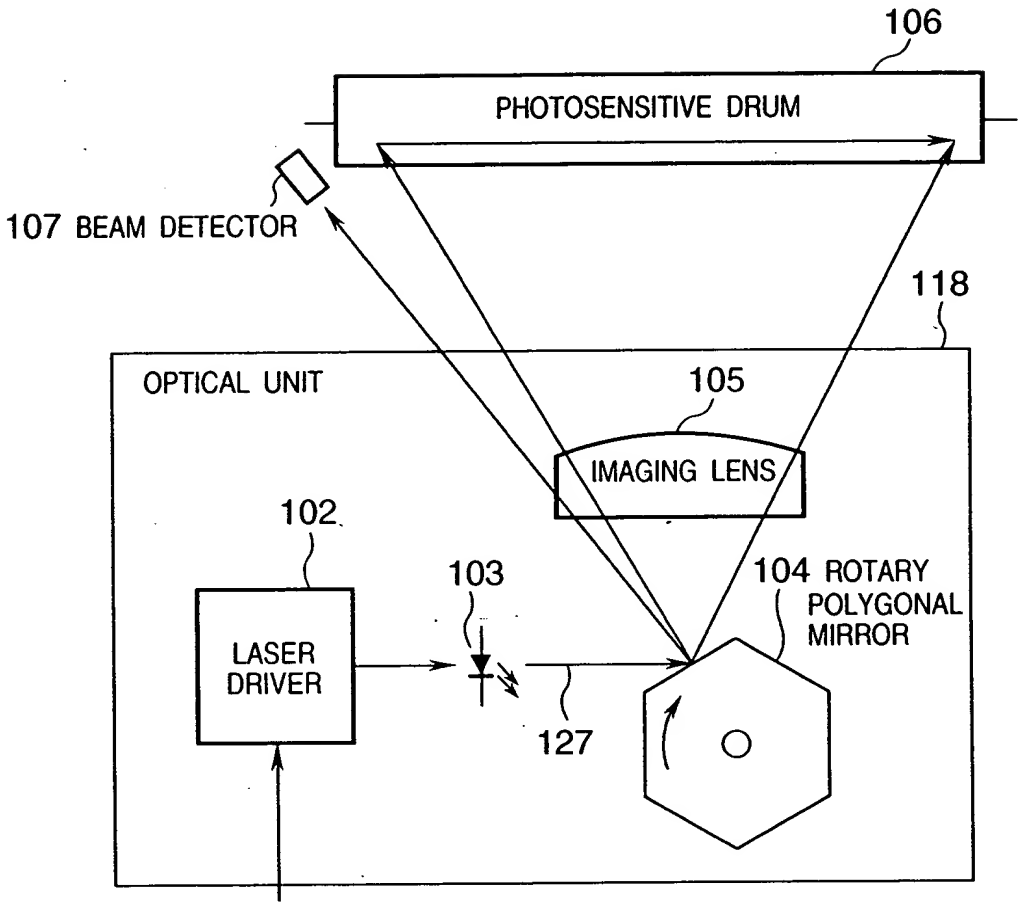
O.G. FIG.
CLASS

FIG. 2



APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 3



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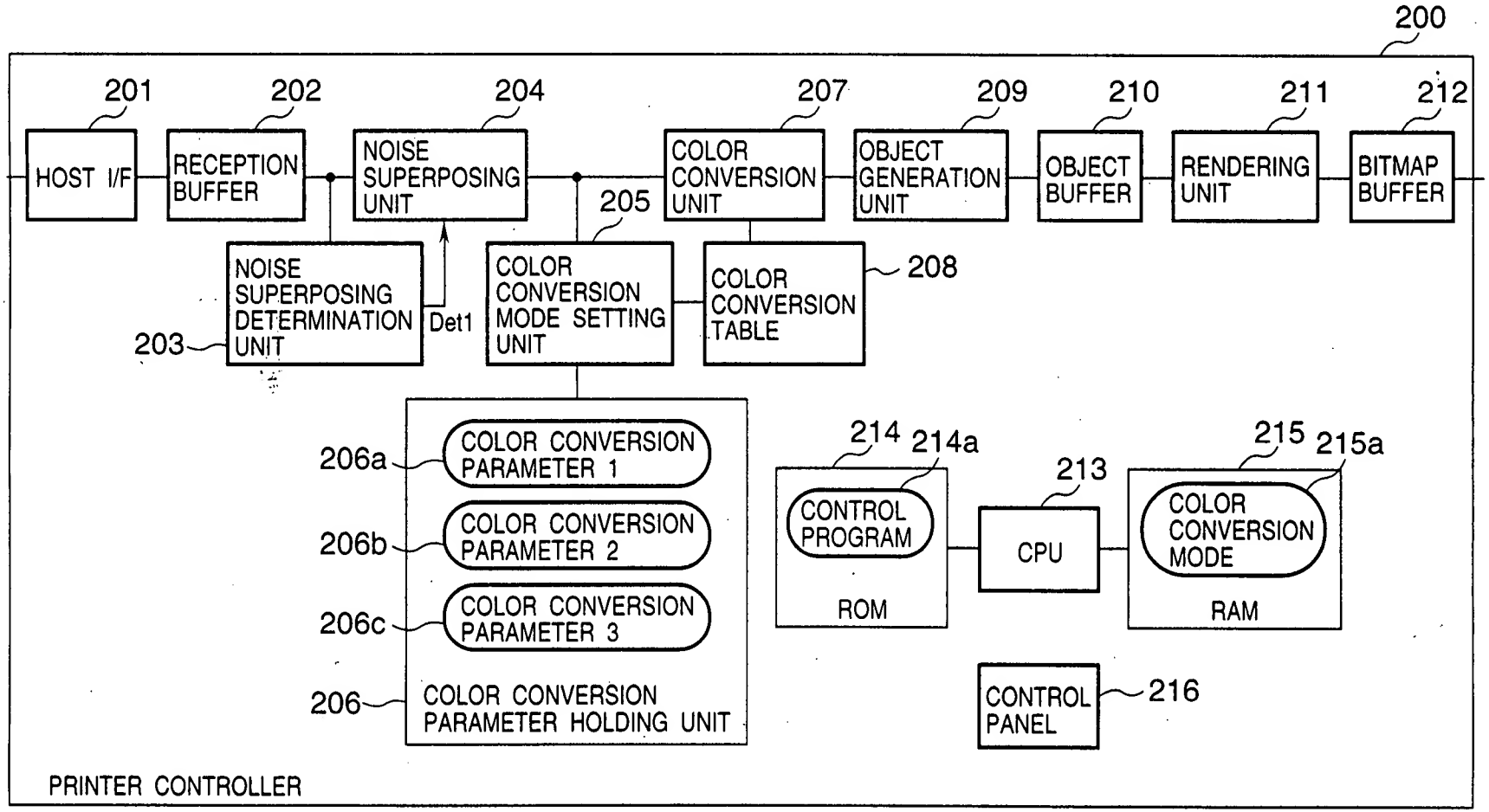
APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

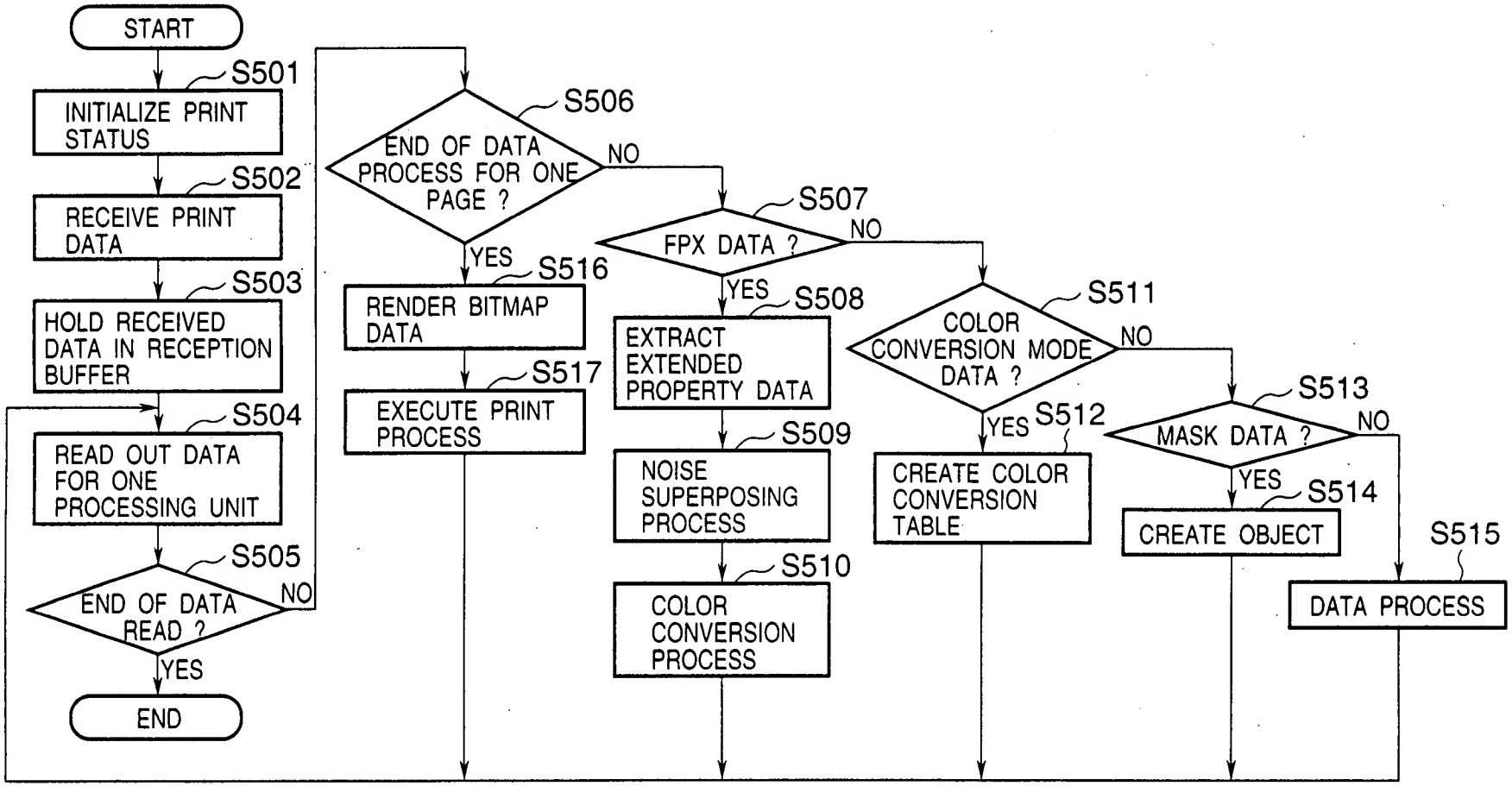
FIG. 4



006620 "6969560

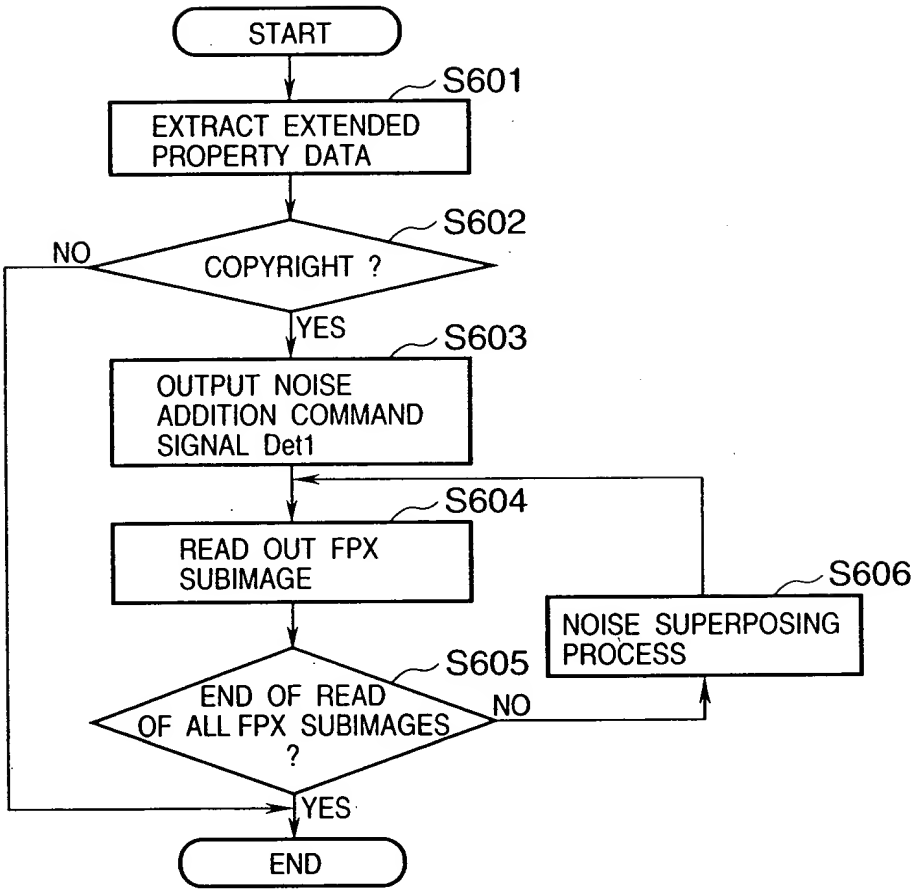
BY DRAFTSMAN CLASS SUBCLASS

FIG. 5



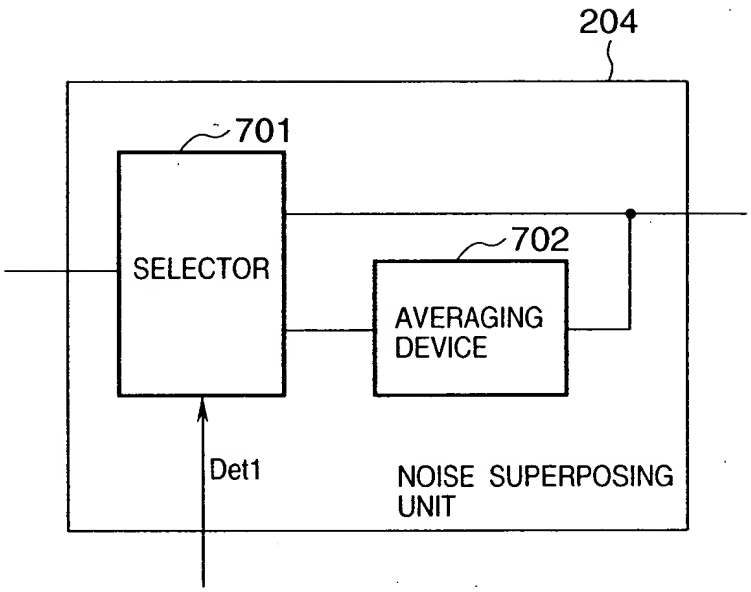
BY DRAFTSMAN | CLASS | SUBCLASS

FIG. 6



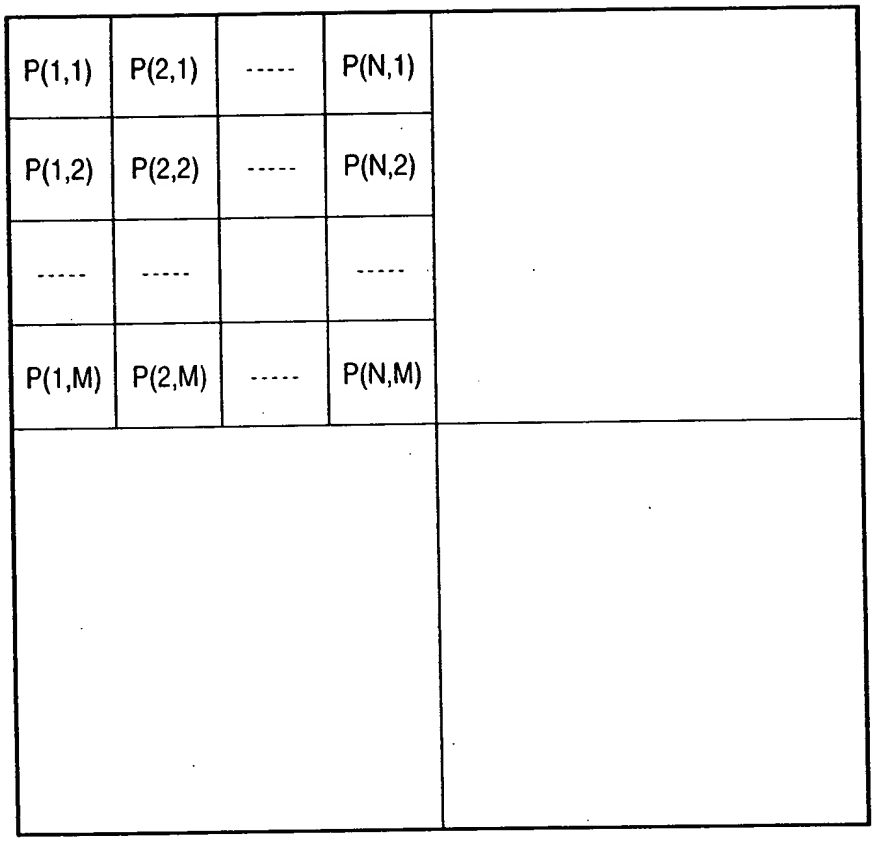
BY DRAFTSMAN | CLASS | SUBCLASS

FIG. 7



DRAFTSMAN | CLASS | SUBCLASS

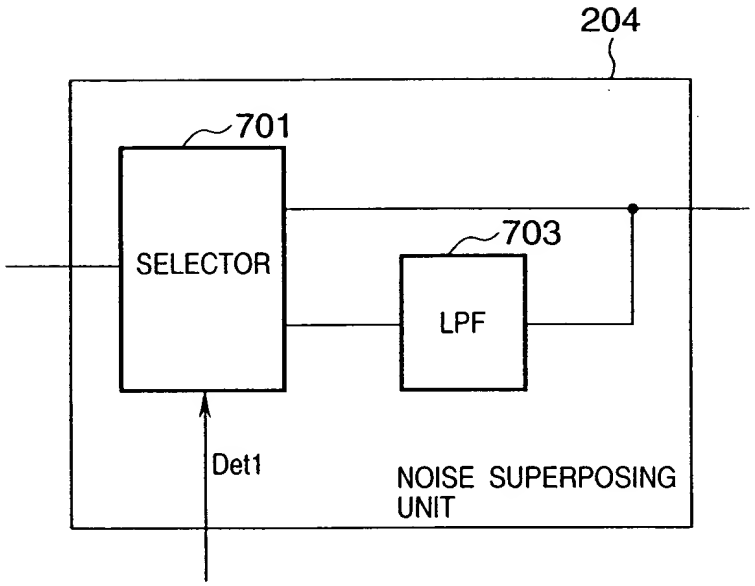
FIG. 8



UNDOCID: <WO 2004/053834 A2>

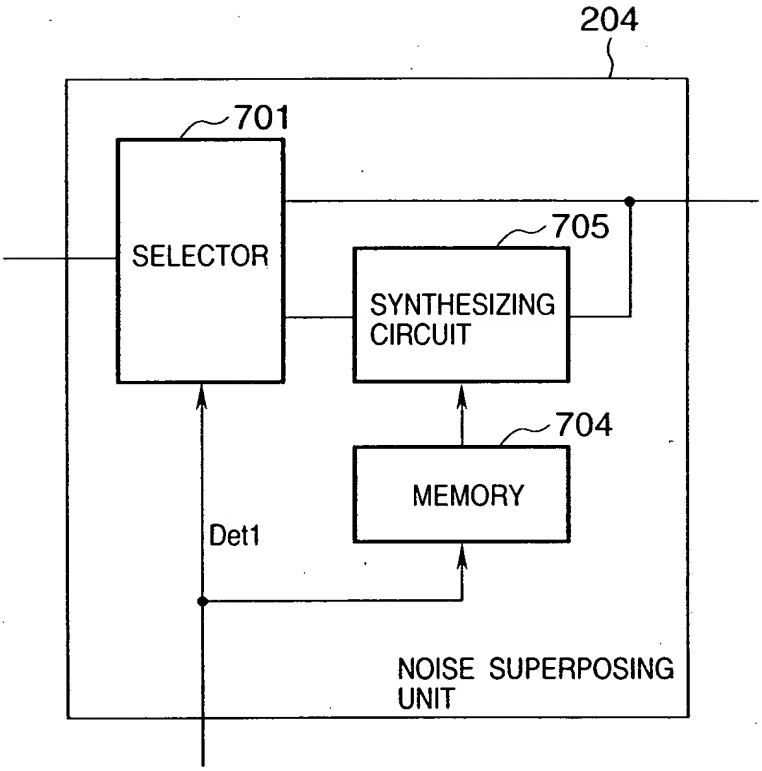
DRAFTSMAN

FIG. 9



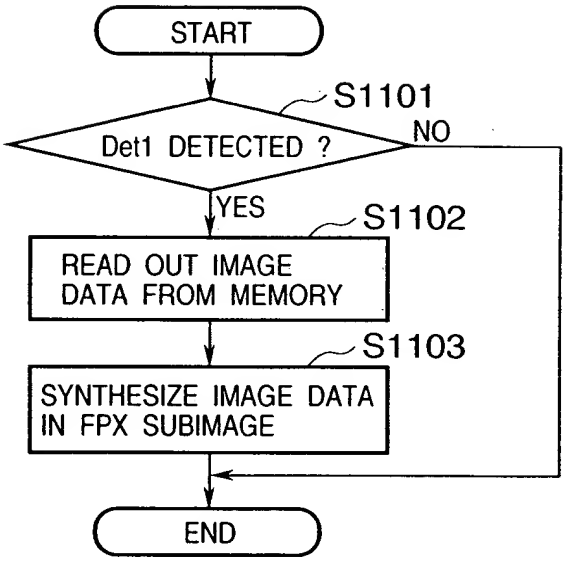
BY DRAFTSMAN | CLASS | SUBCLASS

FIG. 10



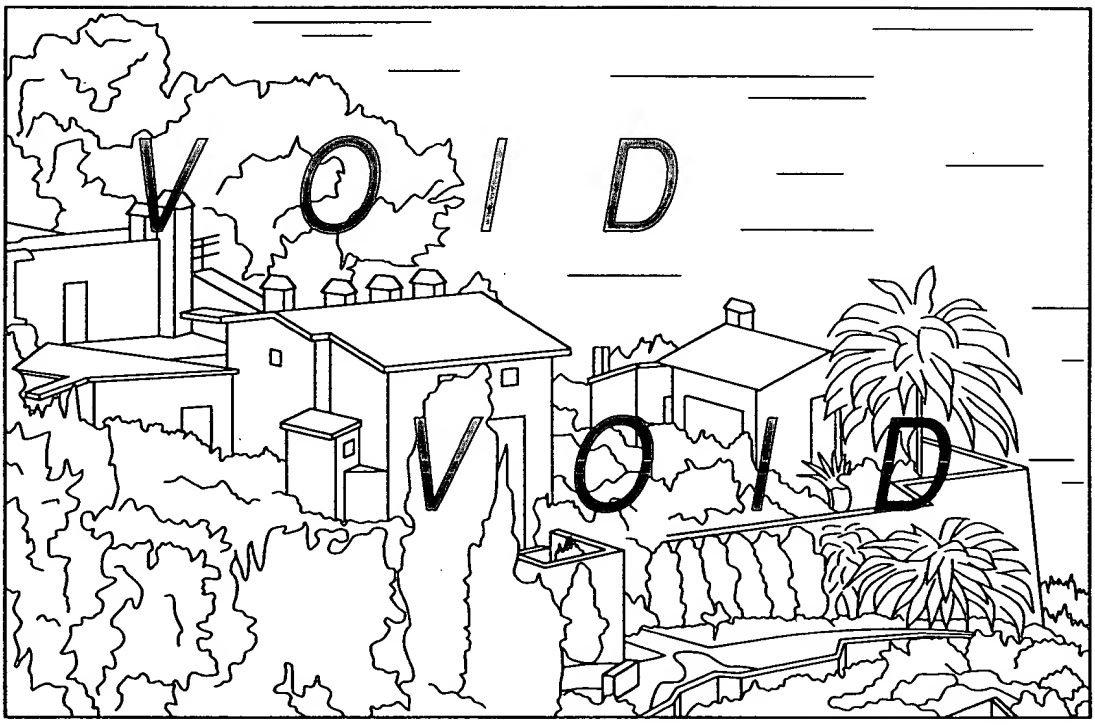
DRAFTSMAN

FIG. 11



BY | CLASS | SUBCLASS
DRAFTSMAN

FIG. 12



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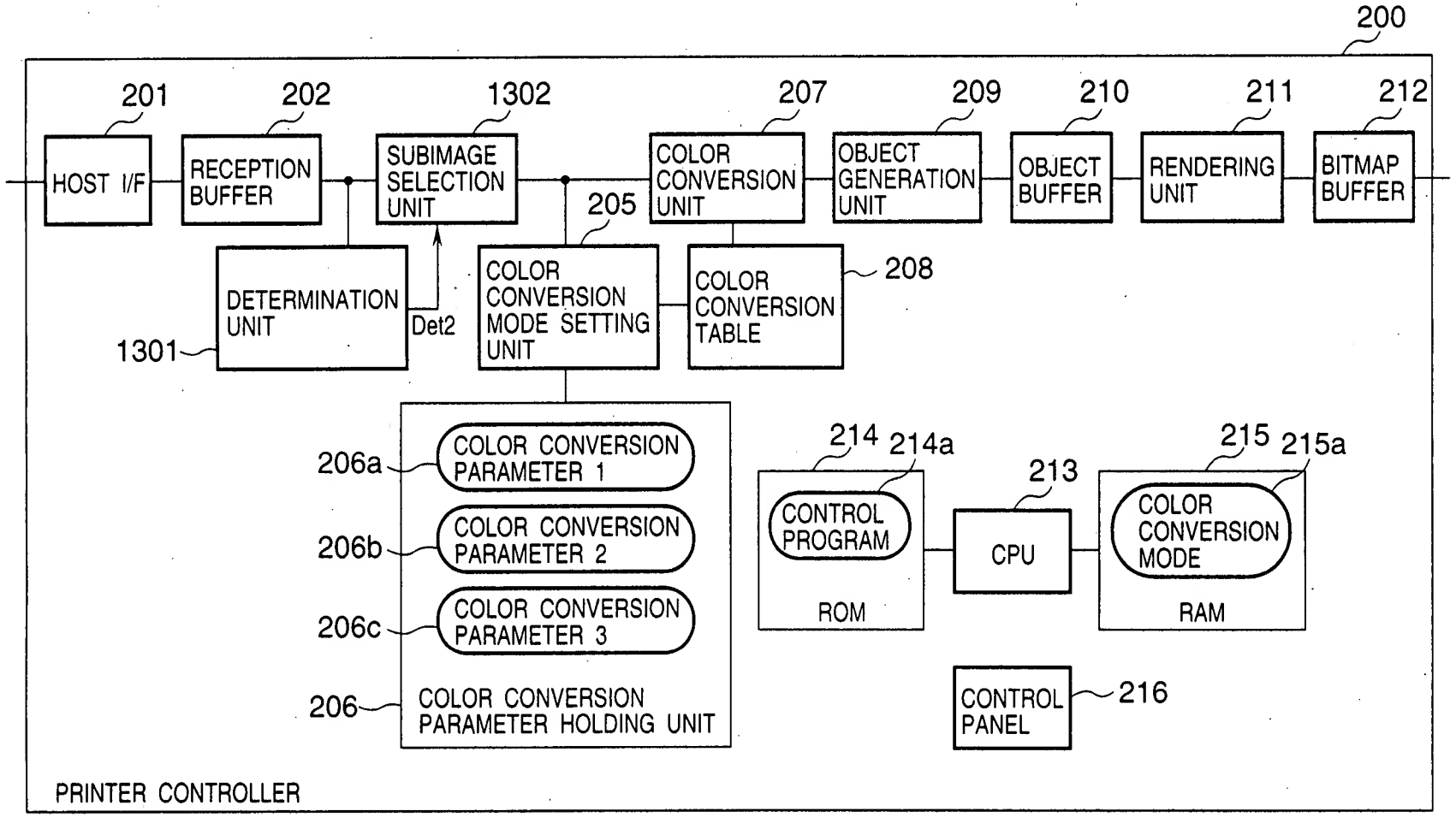
DRAFTSMAN
CLASS
SUBCLASS

FIG. 13



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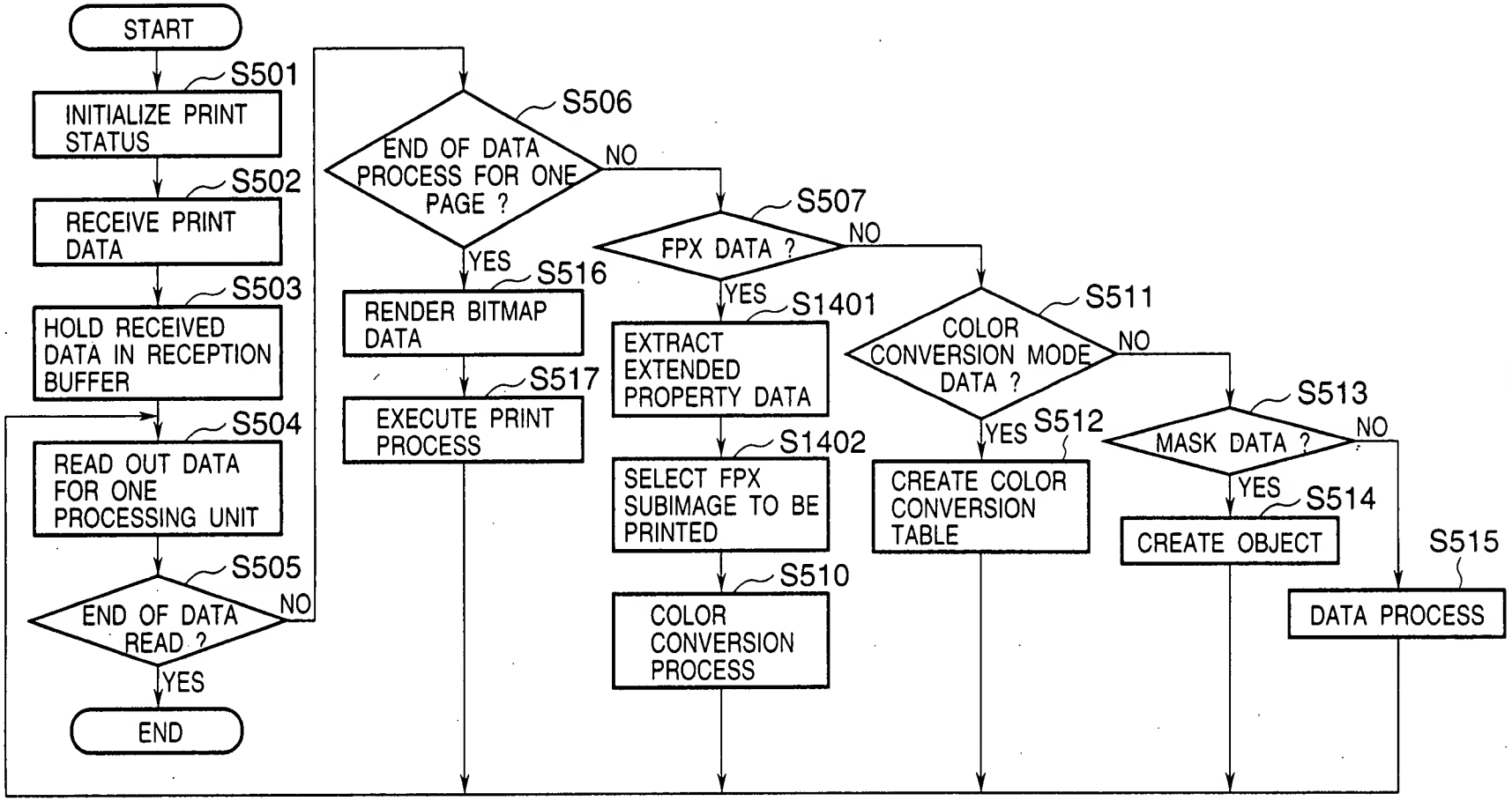
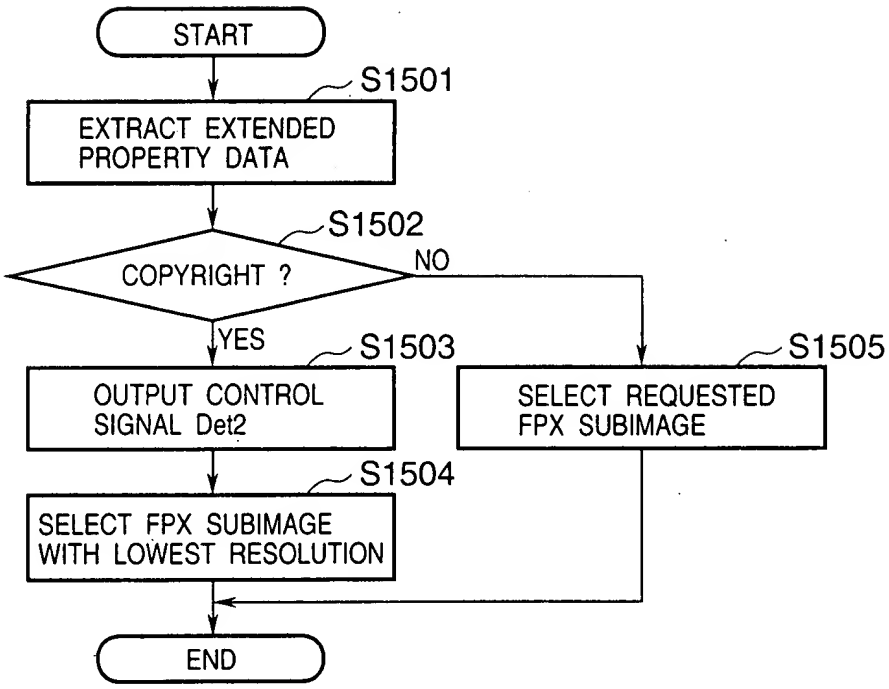
DRAFTSMAN

FIG. 14



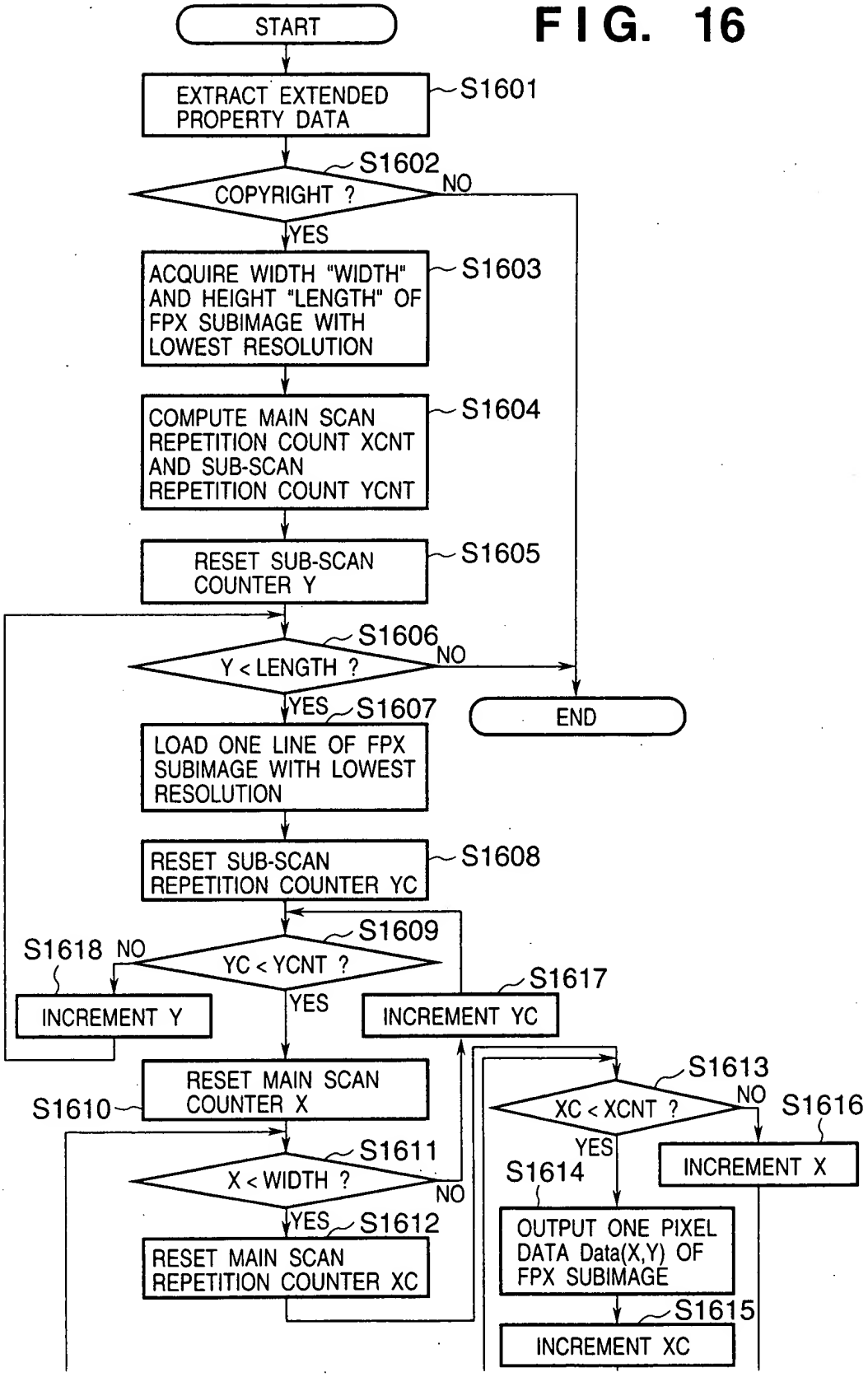
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 15



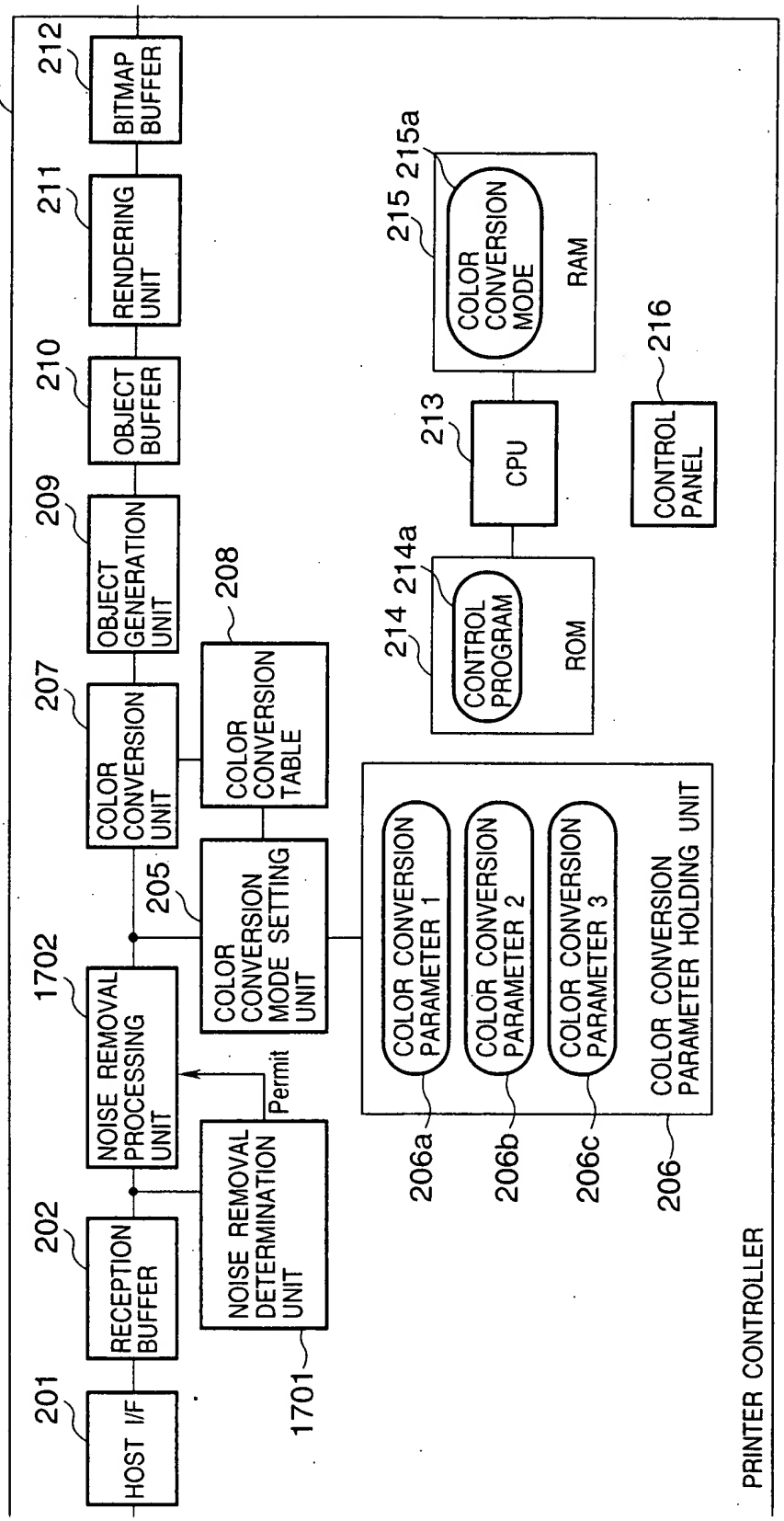
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 16



APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 17



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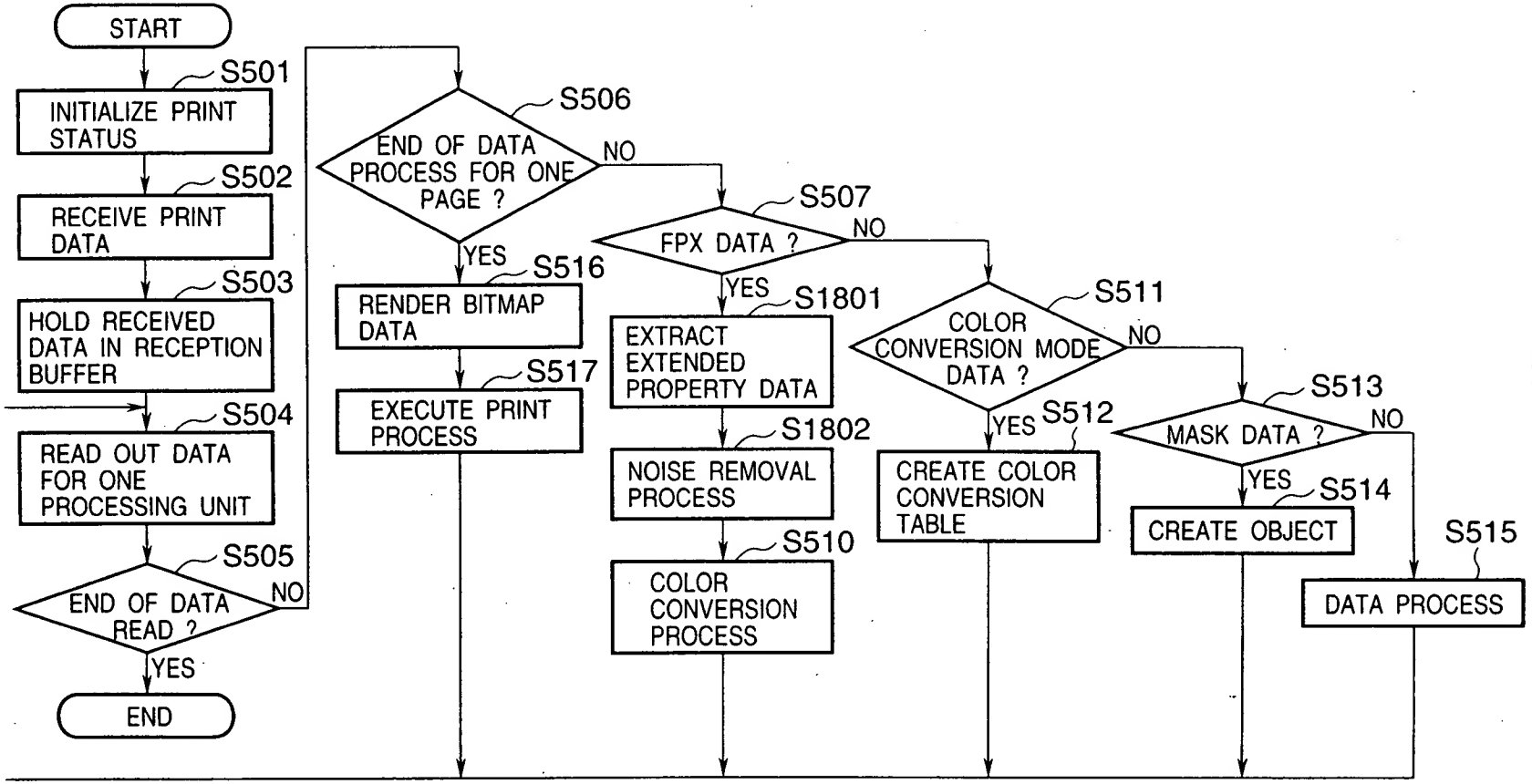
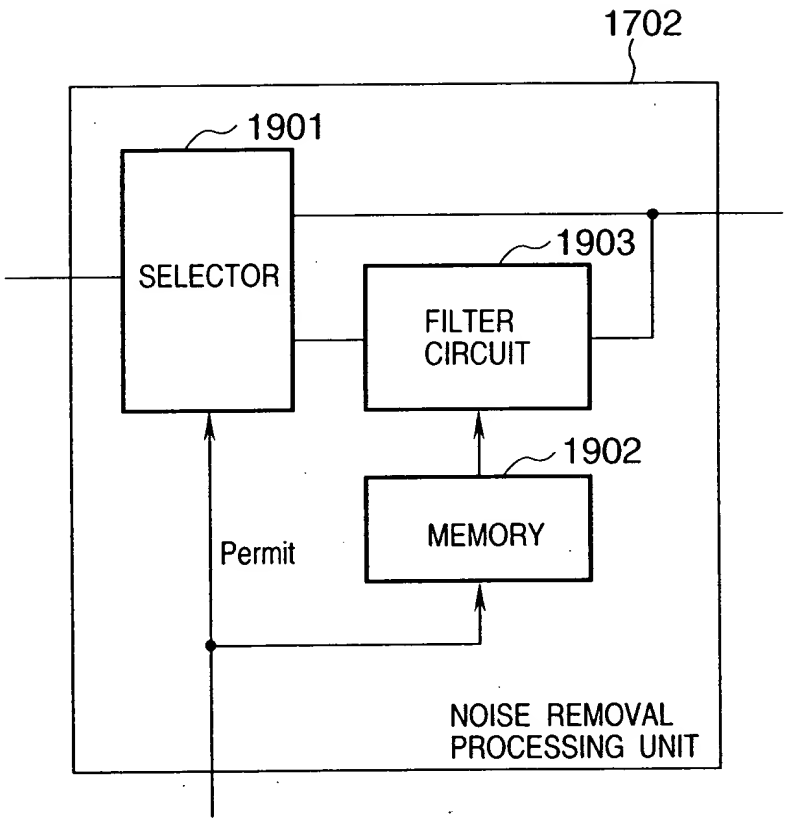
APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

FIG. 18



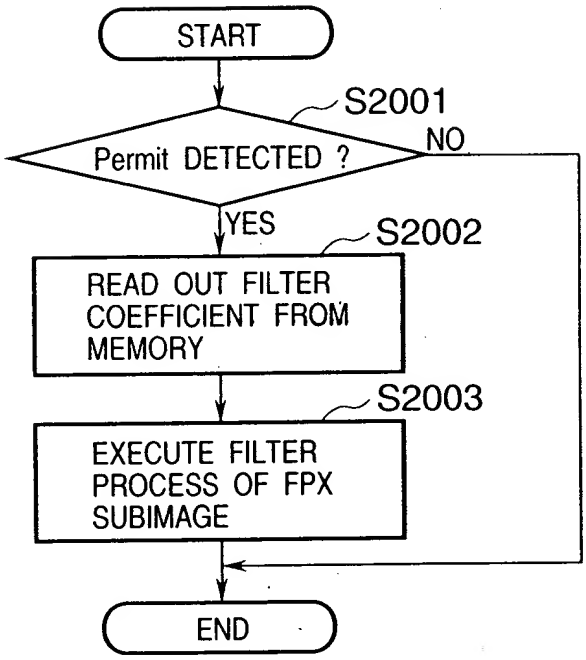
APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

FIG. 19



APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 20



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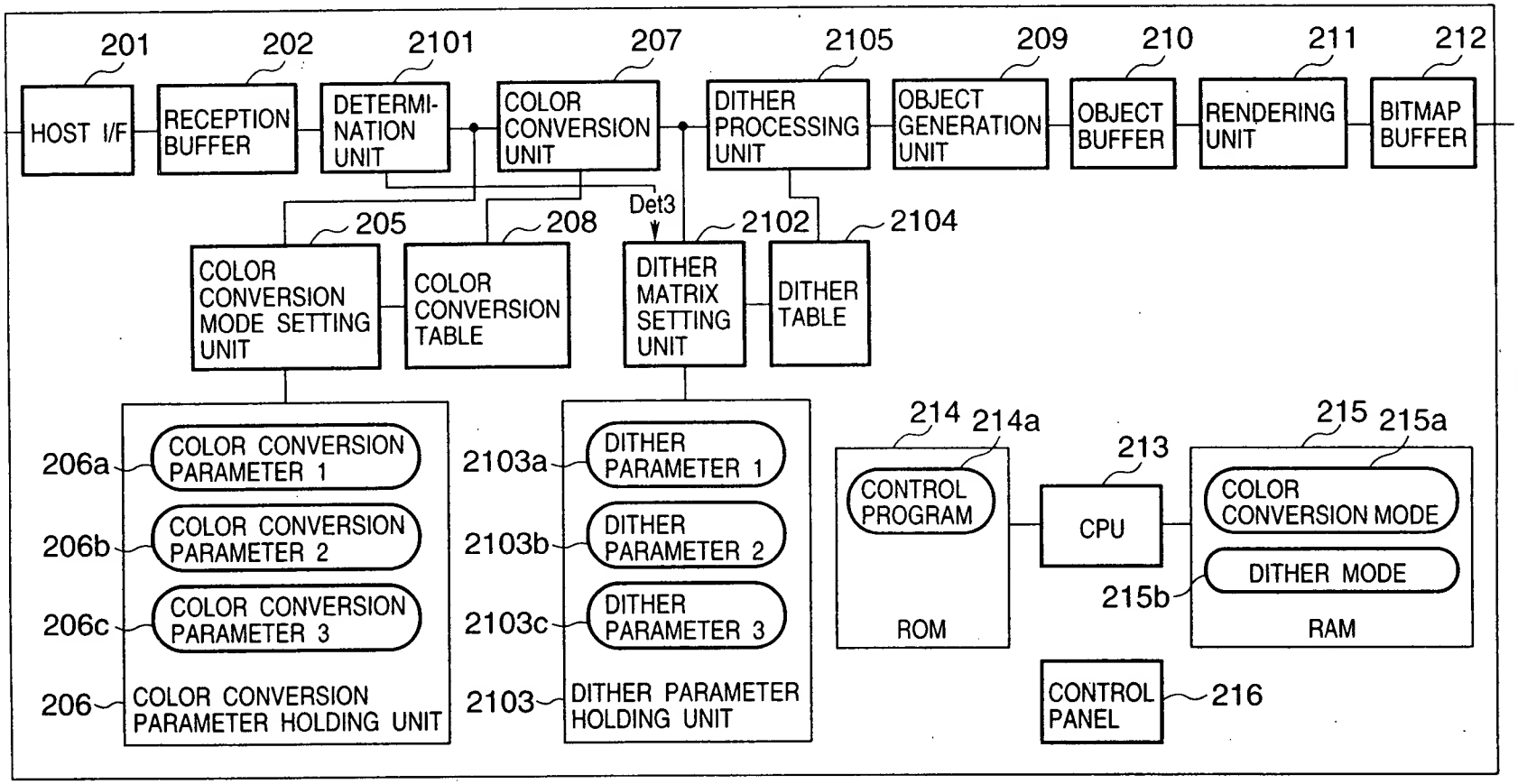
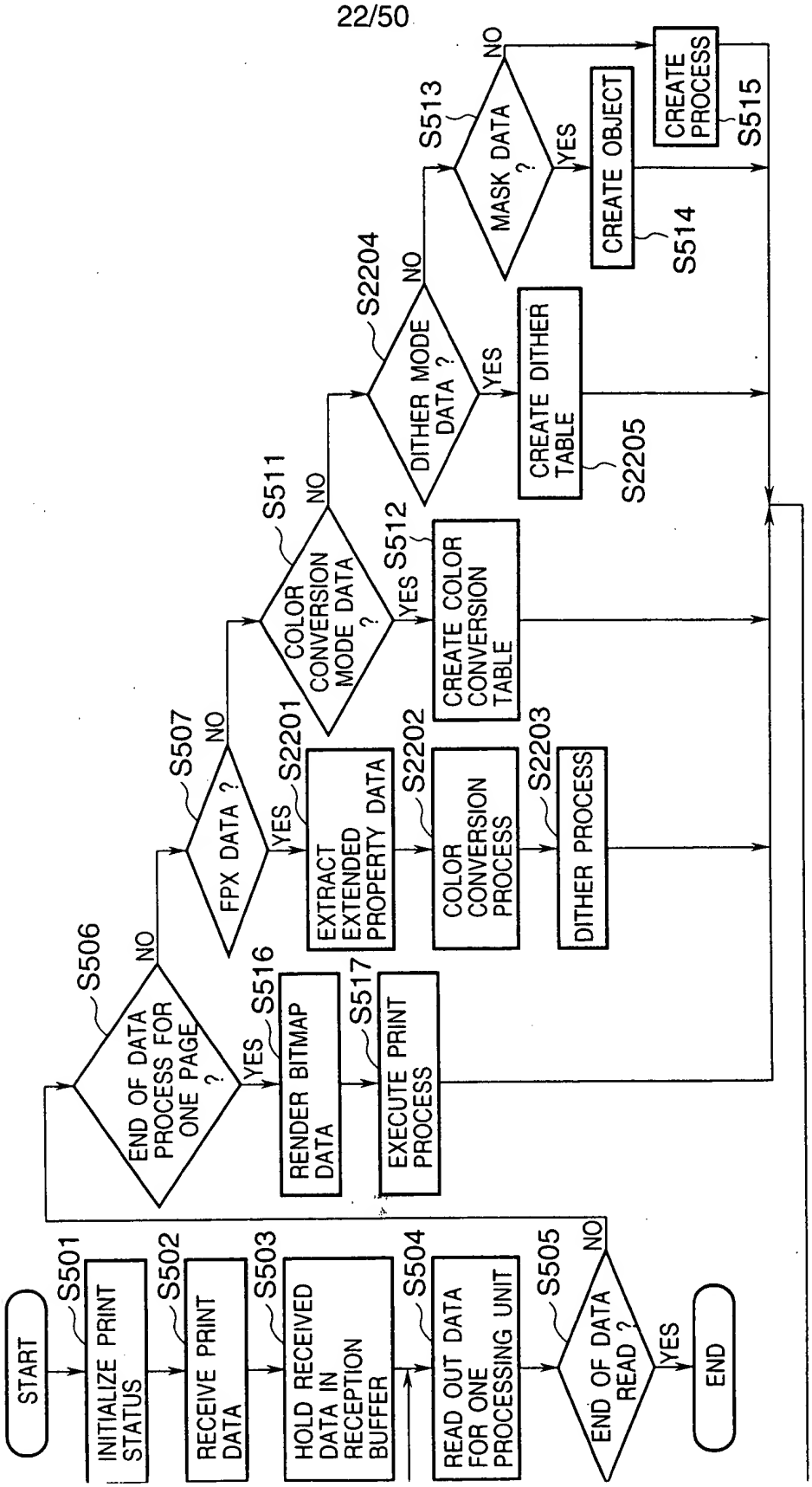
APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

FIG. 21



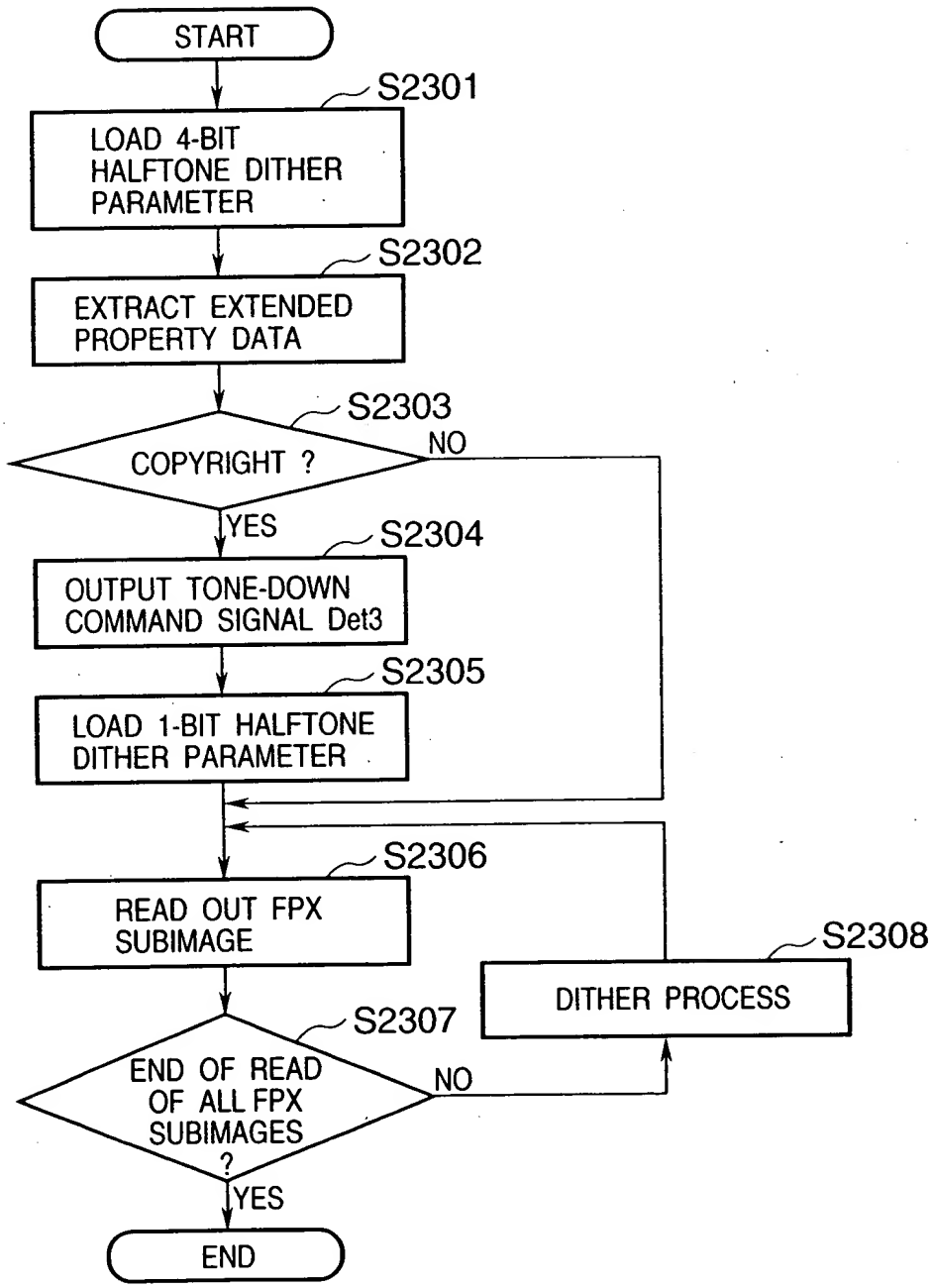
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 22



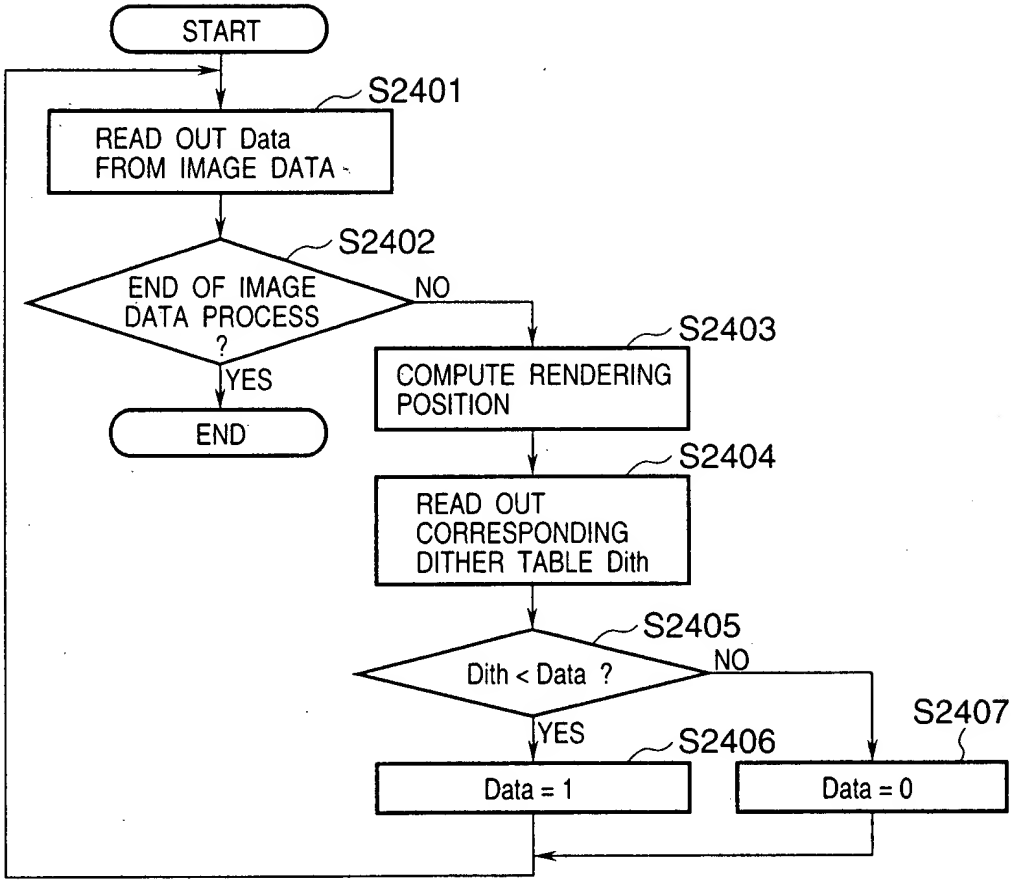
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 23



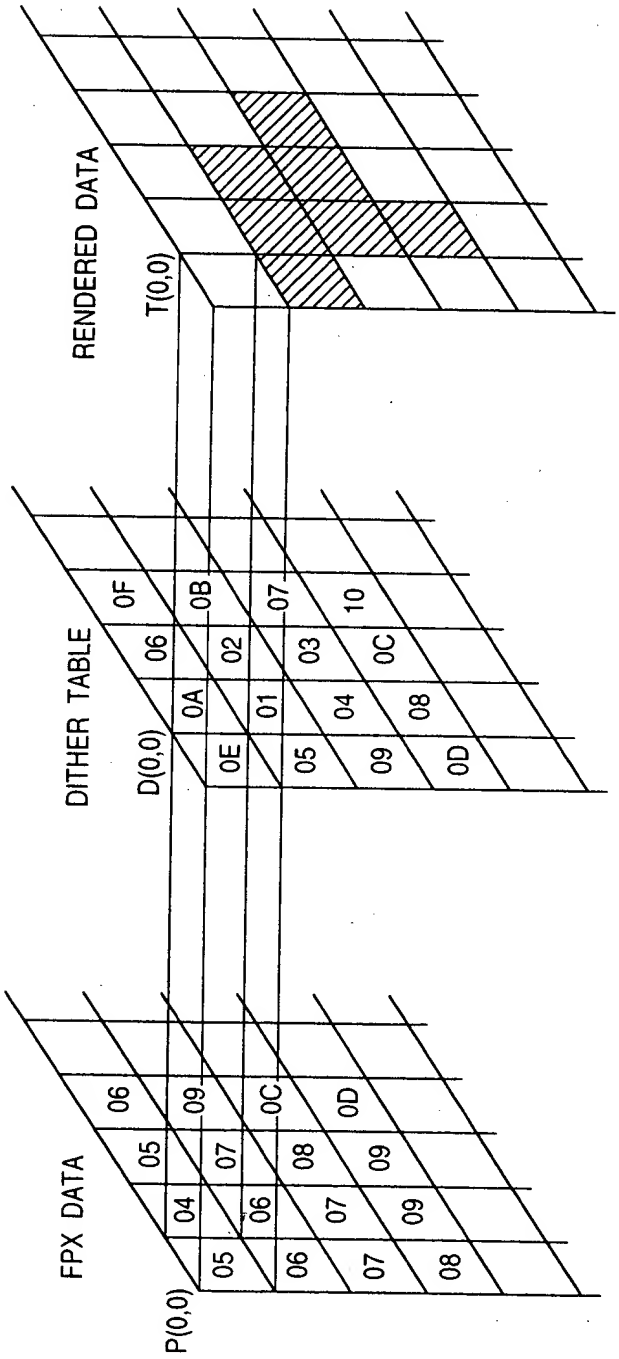
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 24



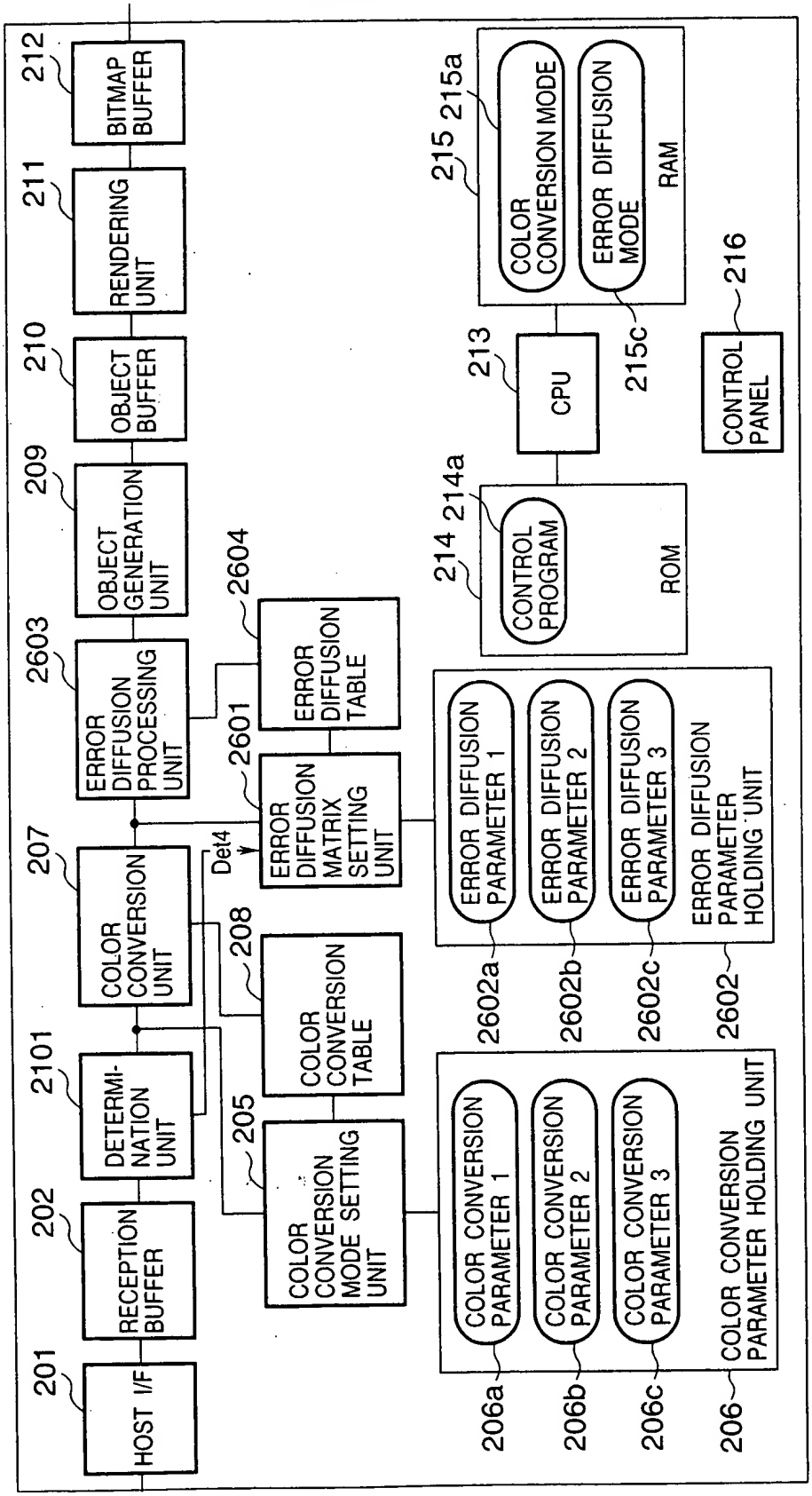
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 25



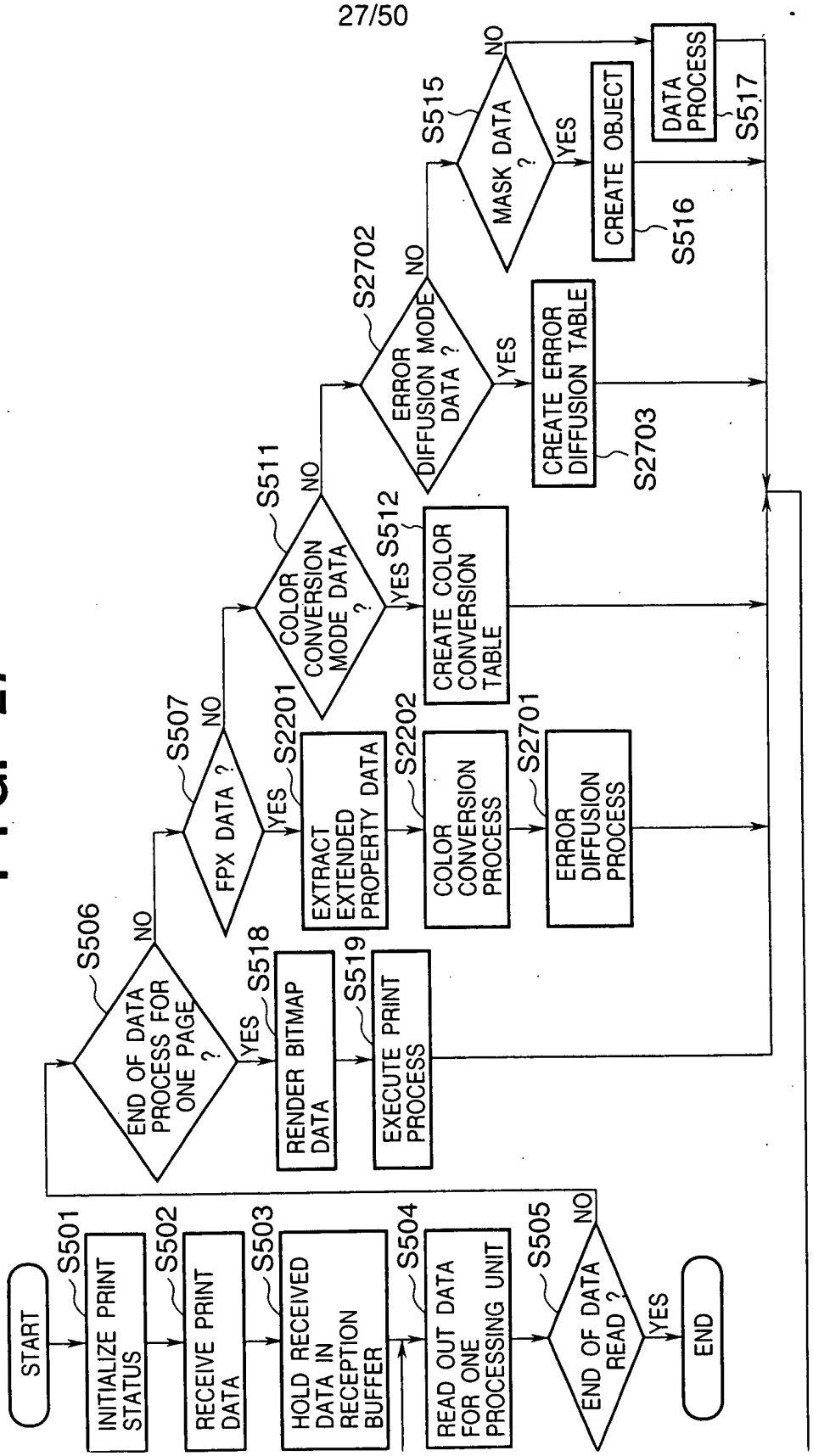
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 26



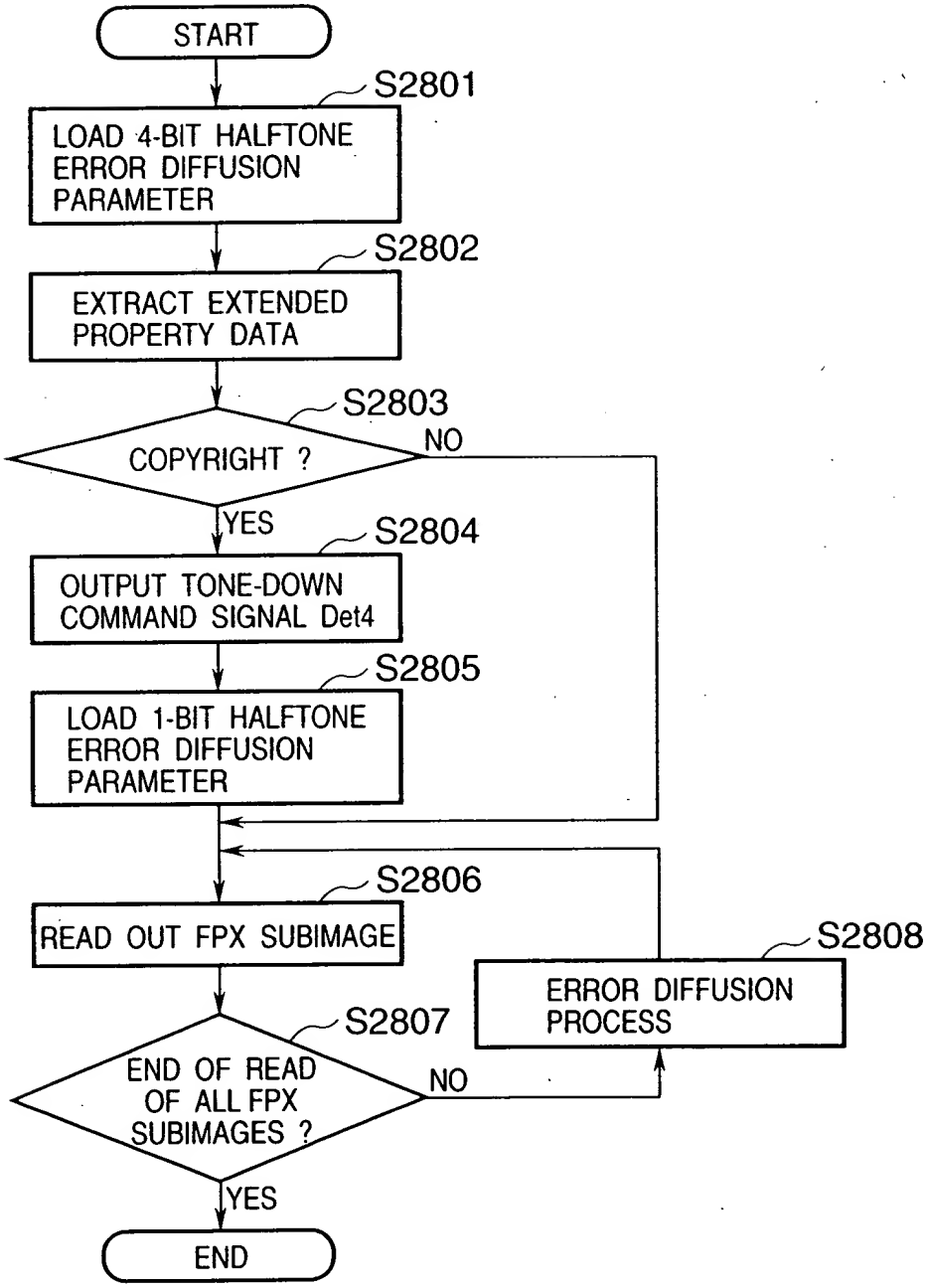
PROMED BY HITTMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 27



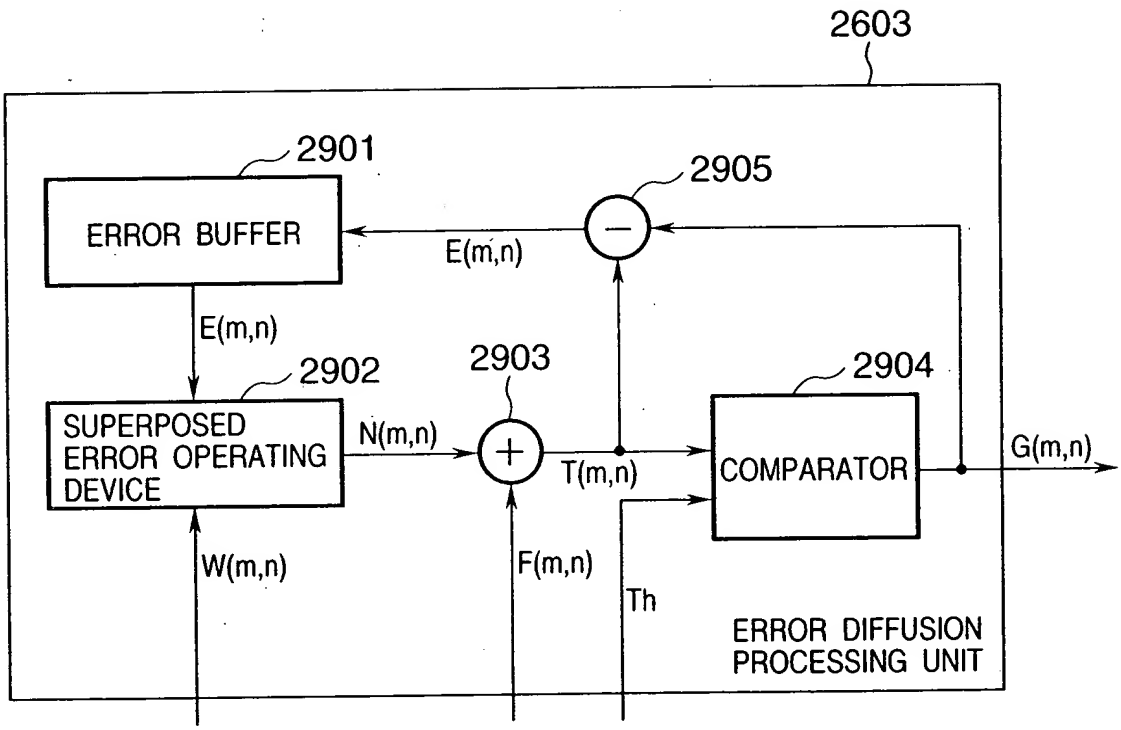
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 28



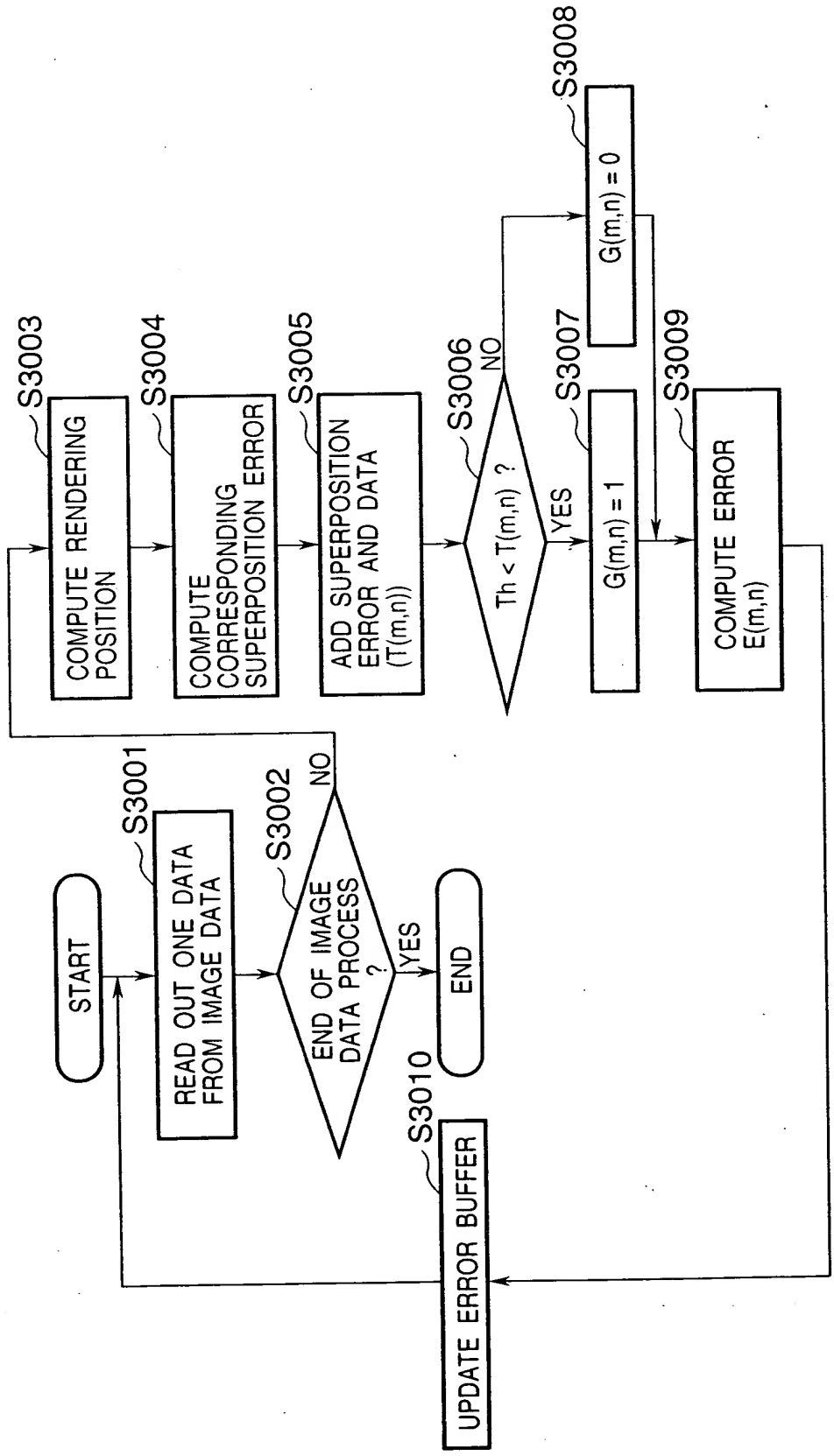
APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

FIG. 29



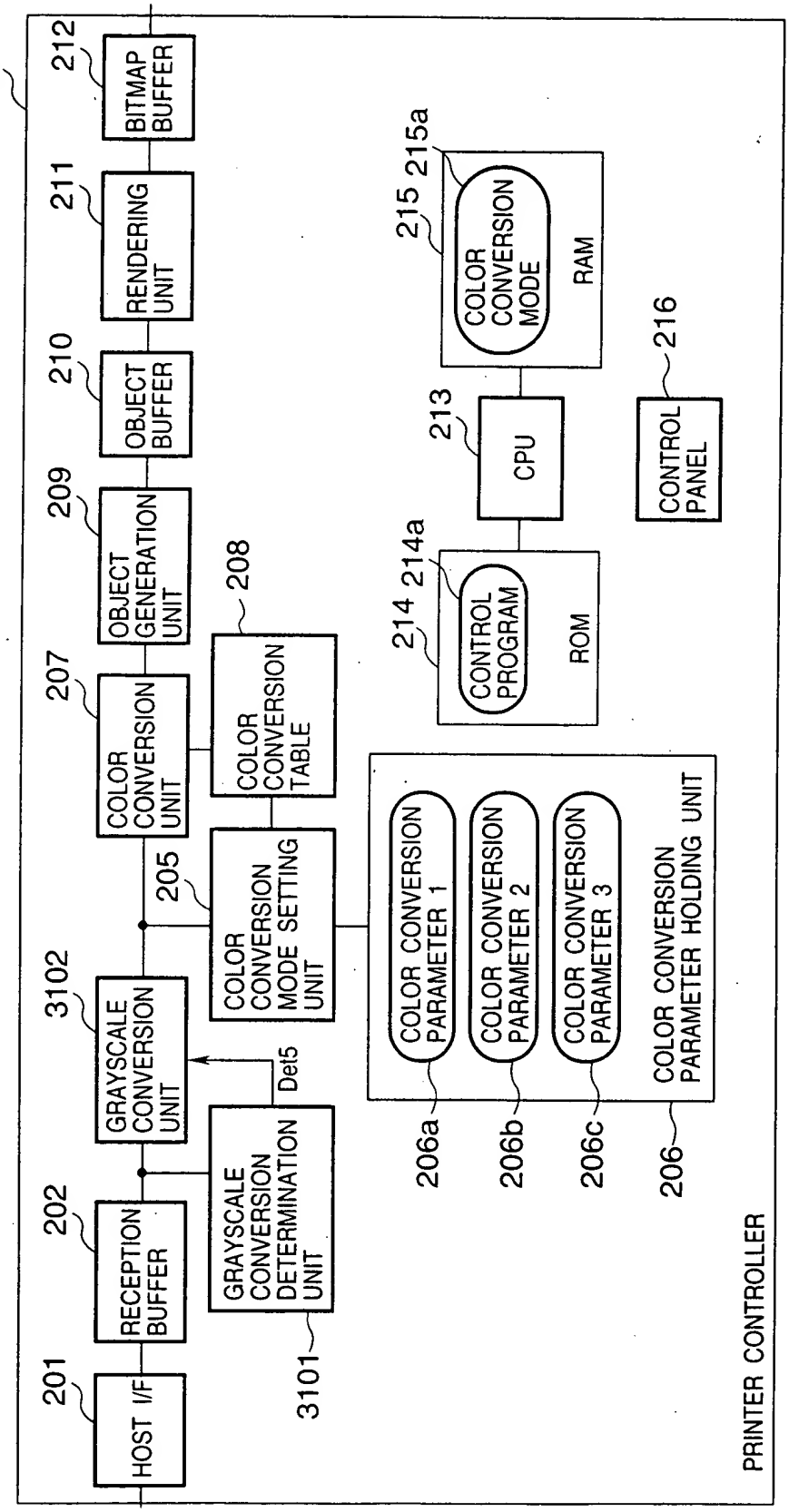
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 30



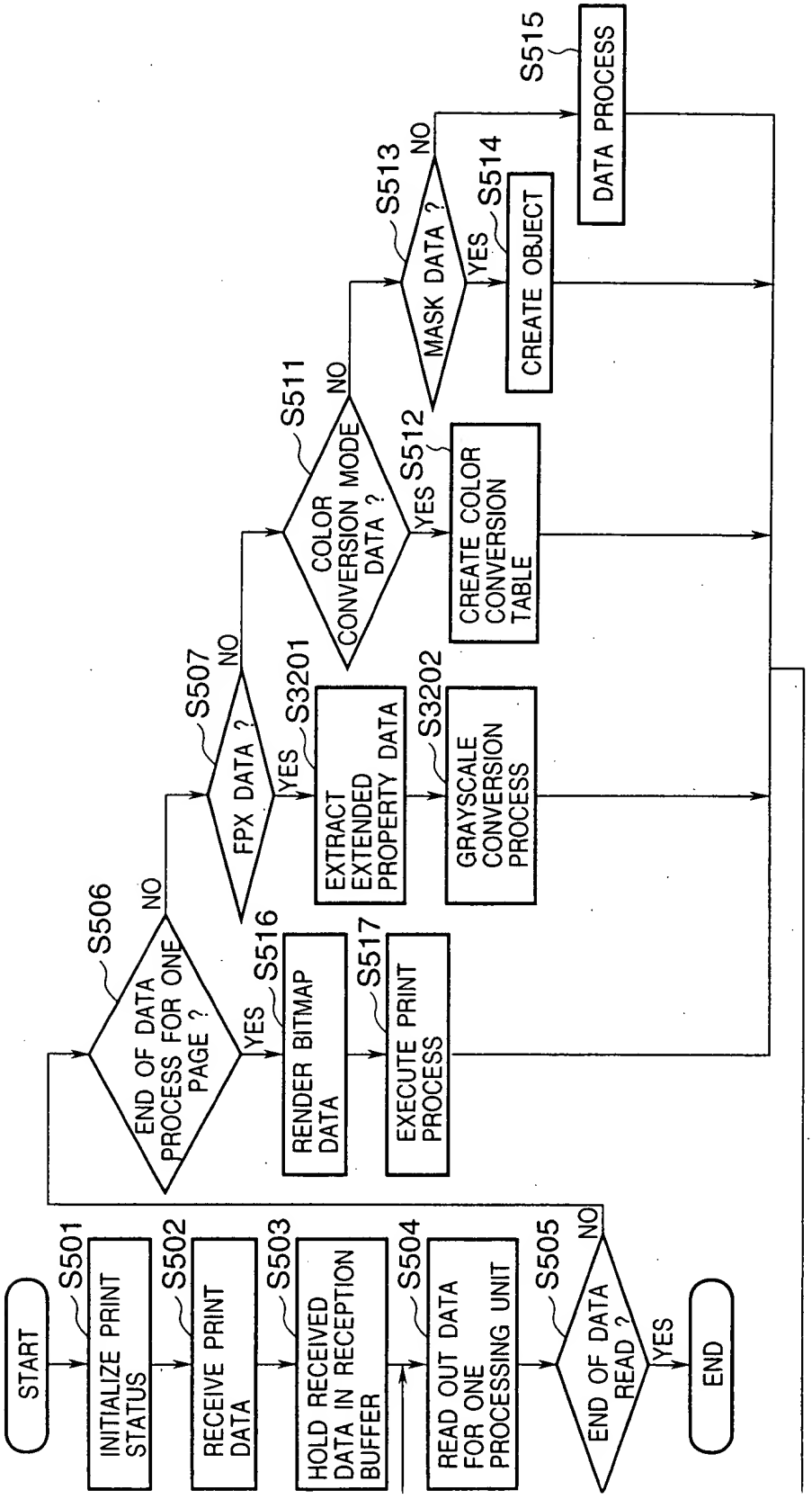
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 31



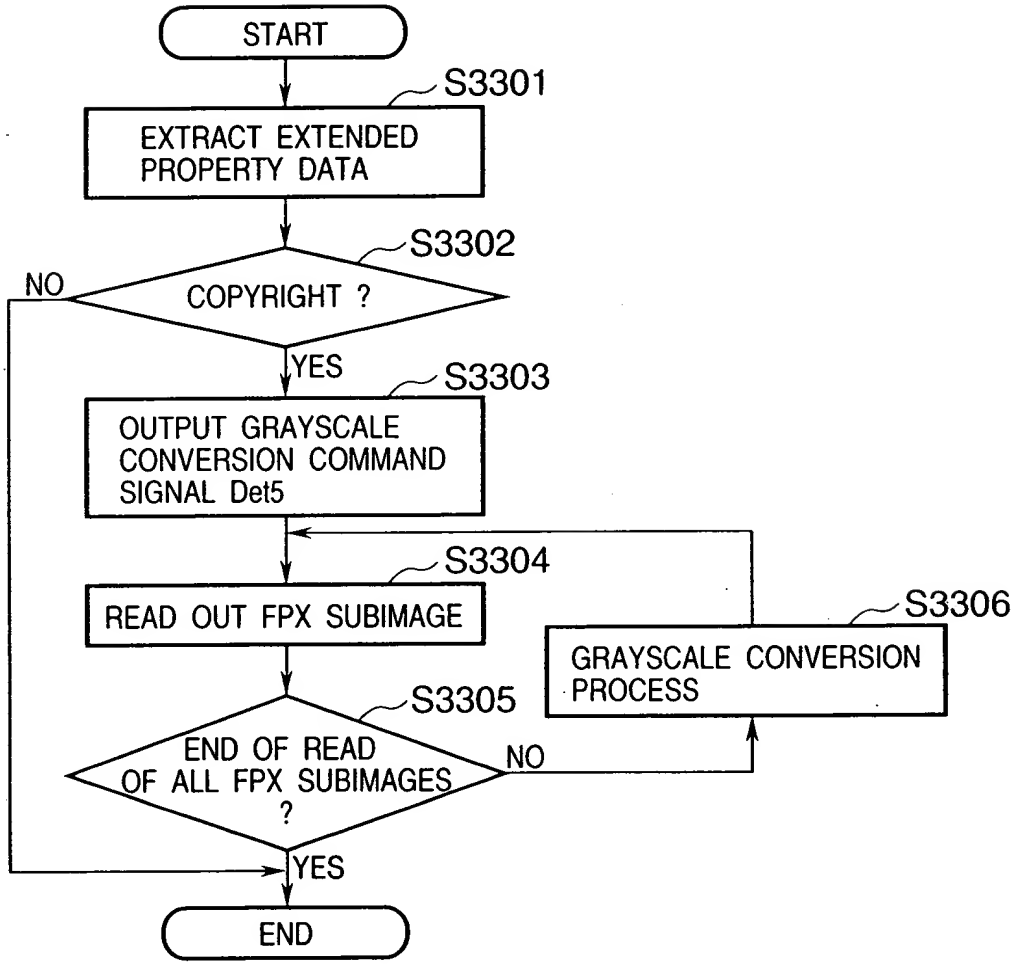
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 32



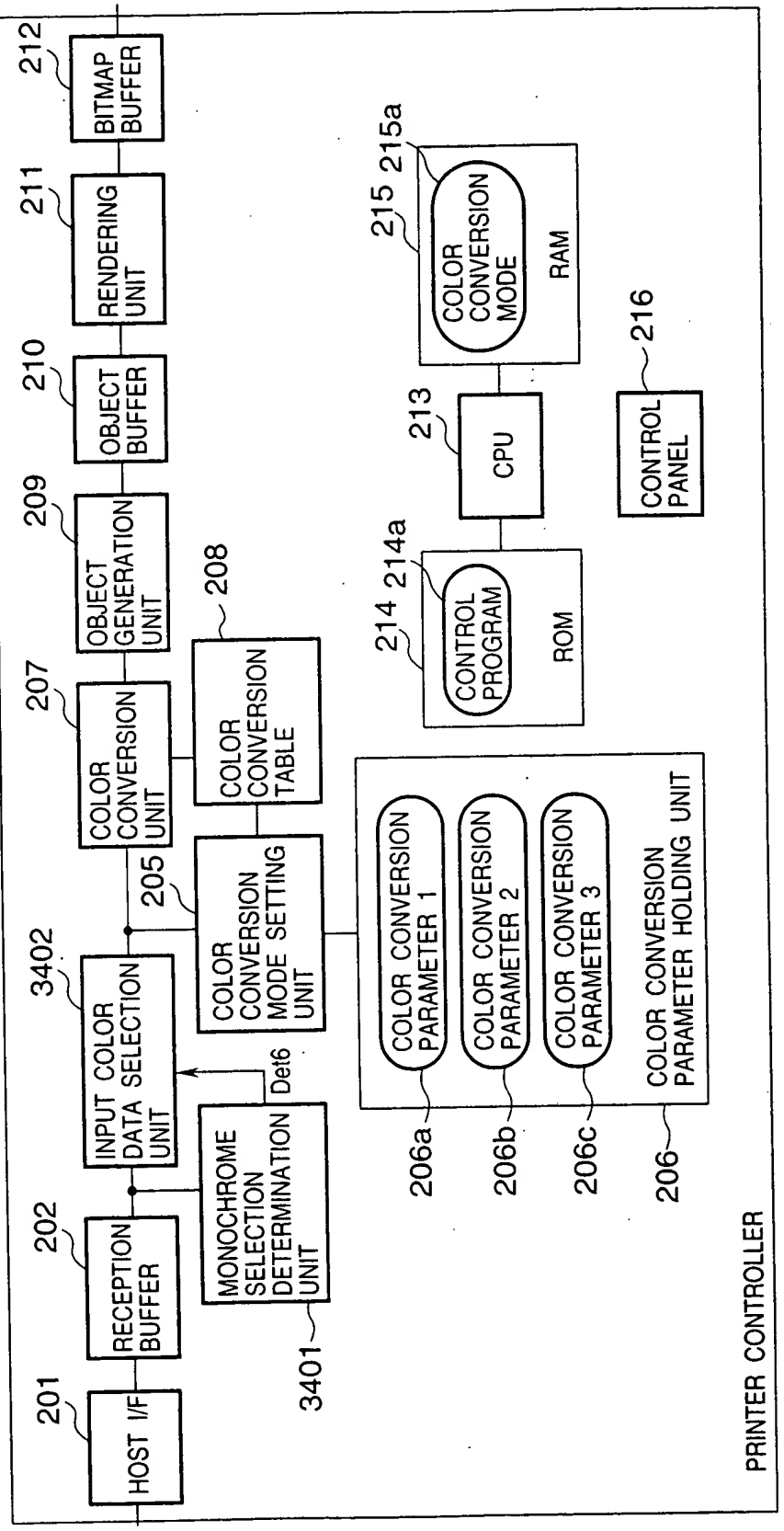
APPROVED BY DRAFTSMAN | O.G. FIG. | CLASS | SUBCLASS

FIG. 33



APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS SUBCLASS

FIG. 34



APPROVED BY DRAFTSMAN
O.G. FIG.
CLASS
SUBCLASS

FIG. 35

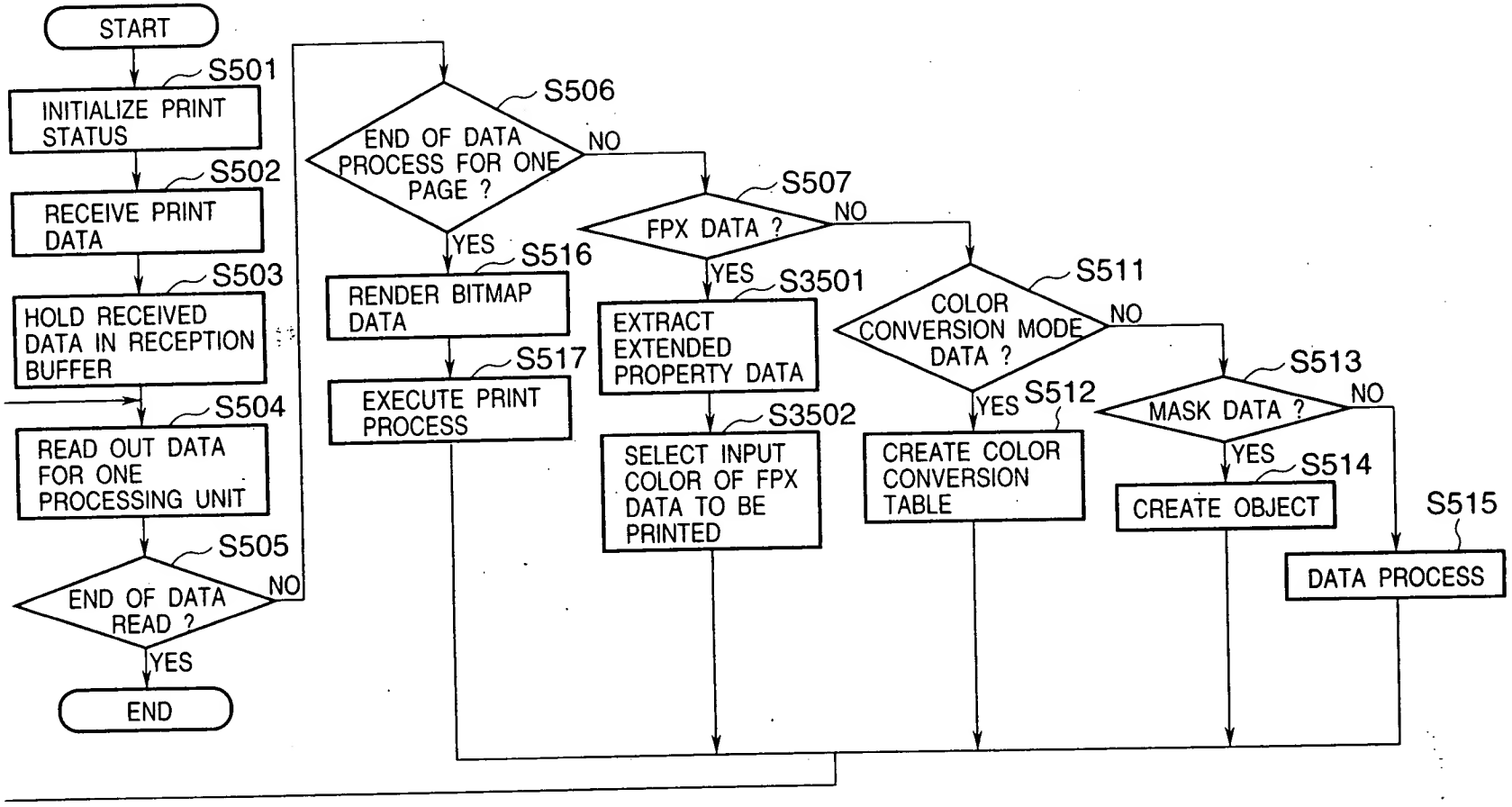


FIG. 36

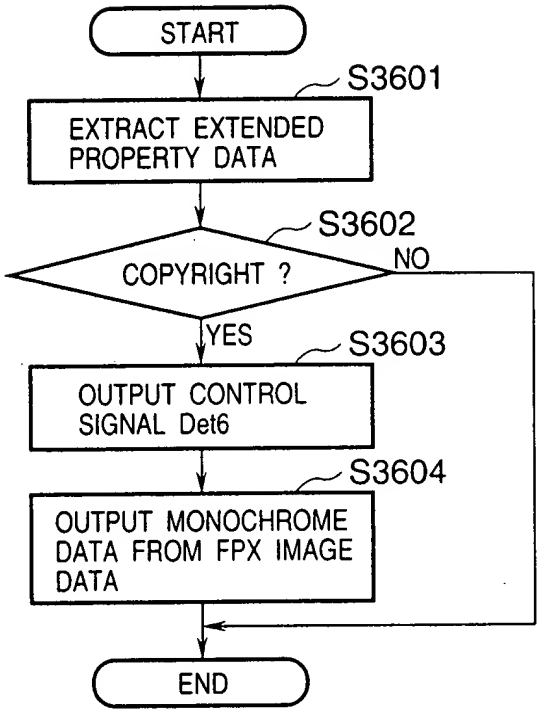

START
S3601
EXTRACT EXTENDED PROPERTY DATA
S3602
COPYRIGHT ?
NO
YES
S3603
OUTPUT CONTROL SIGNAL Det6
S3604
OUTPUT MONOCHROME DATA FROM FPX IMAGE DATA
END

FIG. 37

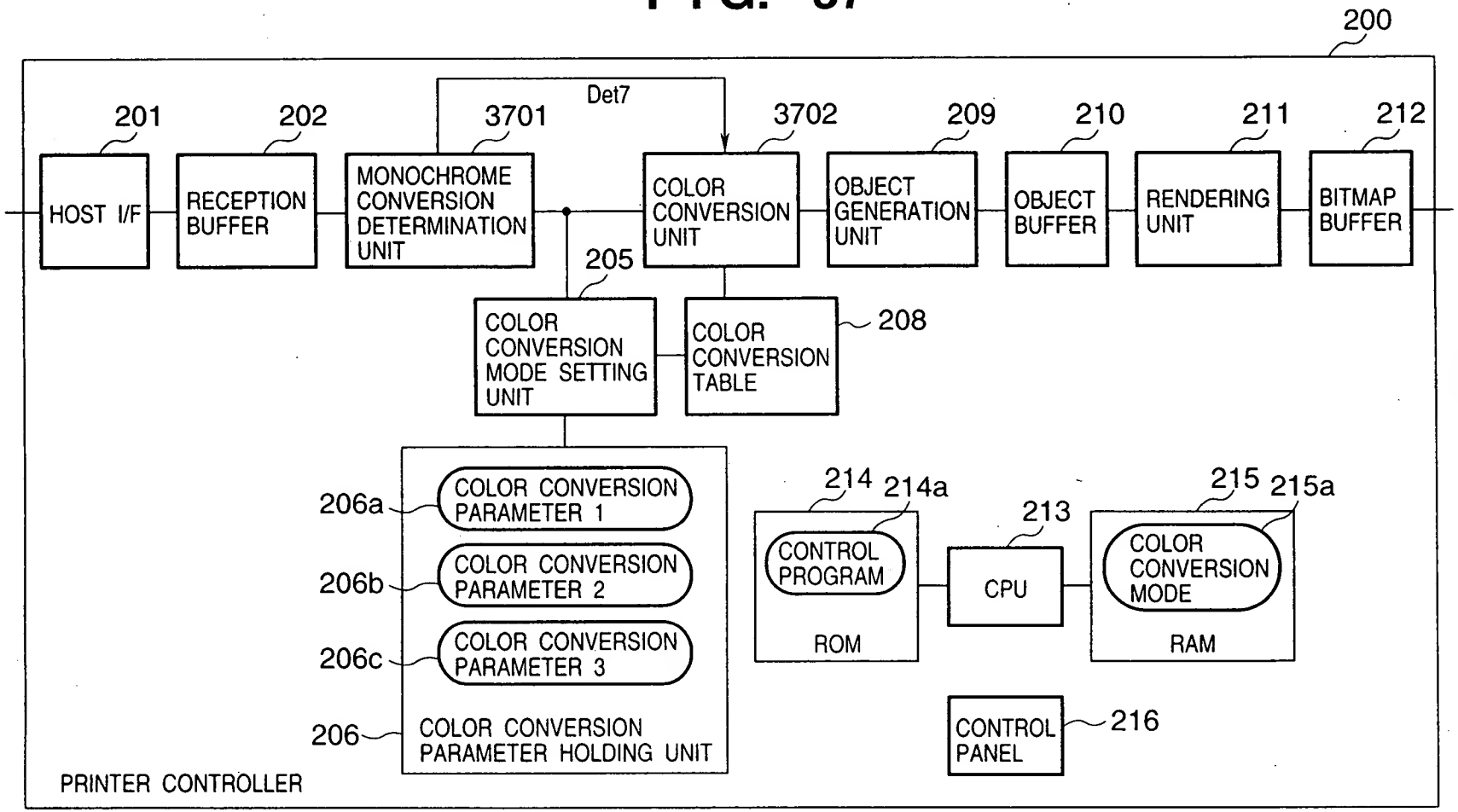

200
201
202
3701
Det7
3702
209
210
211
212
HOST I/F
RECEPTION BUFFER
MONOCHROME CONVERSION DETERMINATION UNIT
COLOR CONVERSION UNIT
OBJECT GENERATION UNIT
OBJECT BUFFER
RENDERING UNIT
BITMAP BUFFER
205
COLOR CONVERSION MODE SETTING UNIT
COLOR CONVERSION TABLE
208
206a
COLOR CONVERSION PARAMETER 1
206b
COLOR CONVERSION PARAMETER 2
206c
COLOR CONVERSION PARAMETER 3
206
COLOR CONVERSION PARAMETER HOLDING UNIT
214
214a
CONTROL PROGRAM
ROM
213
CPU
215
215a
COLOR CONVERSION MODE
RAM
CONTROL PANEL
216
PRINTER CONTROLLER

FIG. 38

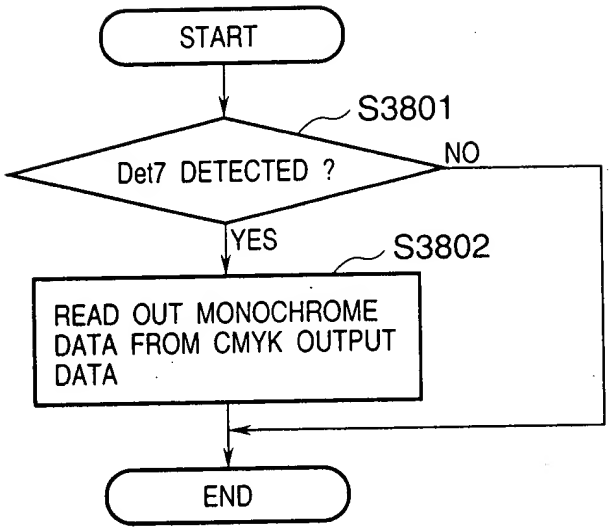

START
S3801
Det7 DETECTED ?
NO
YES
S3802
READ OUT MONOCHROME DATA FROM CMYK OUTPUT DATA
END

FIG. 39

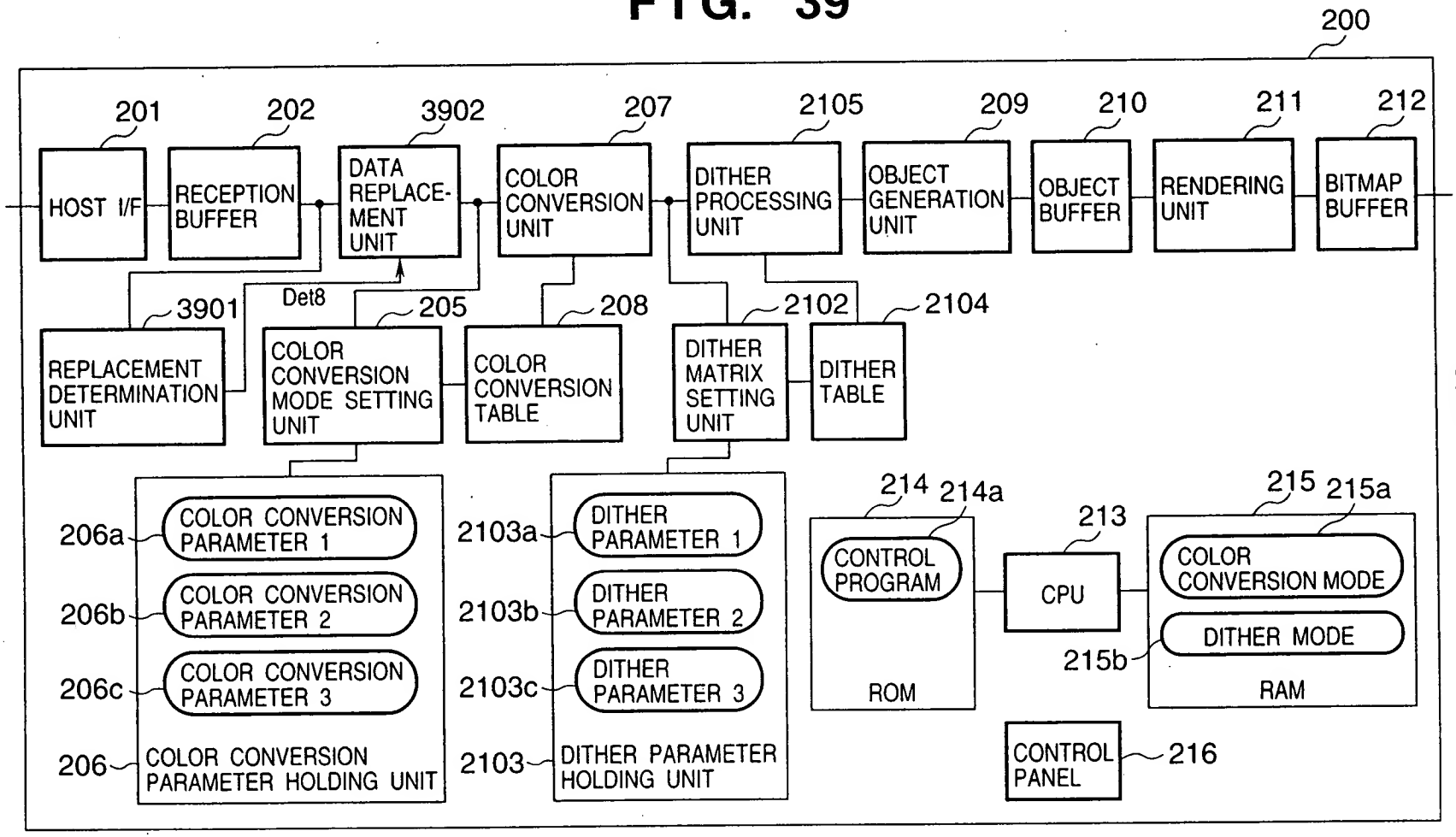

200
201
HOST I/F
202
RECEPTION BUFFER
3902
DATA REPLACE-MENT UNIT
207
COLOR CONVERSION UNIT
2105
DITHER PROCESSING UNIT
209
OBJECT GENERATION UNIT
210
OBJECT BUFFER
211
RENDERING UNIT
212
BITMAP BUFFER
Det8
3901
REPLACEMENT DETERMINATION UNIT
205
COLOR CONVERSION MODE SETTING UNIT
208
COLOR CONVERSION TABLE
2102
DITHER MATRIX SETTING UNIT
2104
DITHER TABLE
206a
COLOR CONVERSION PARAMETER 1
206b
COLOR CONVERSION PARAMETER 2
206c
COLOR CONVERSION PARAMETER 3
206
COLOR CONVERSION PARAMETER HOLDING UNIT
2103a
DITHER PARAMETER 1
2103b
DITHER PARAMETER 2
2103c
DITHER PARAMETER 3
2103
DITHER PARAMETER HOLDING UNIT
214
214a
CONTROL PROGRAM
ROM
213
CPU
215
215a
COLOR CONVERSION MODE
DITHER MODE
215b
RAM
CONTROL PANEL
216

FIG. 40

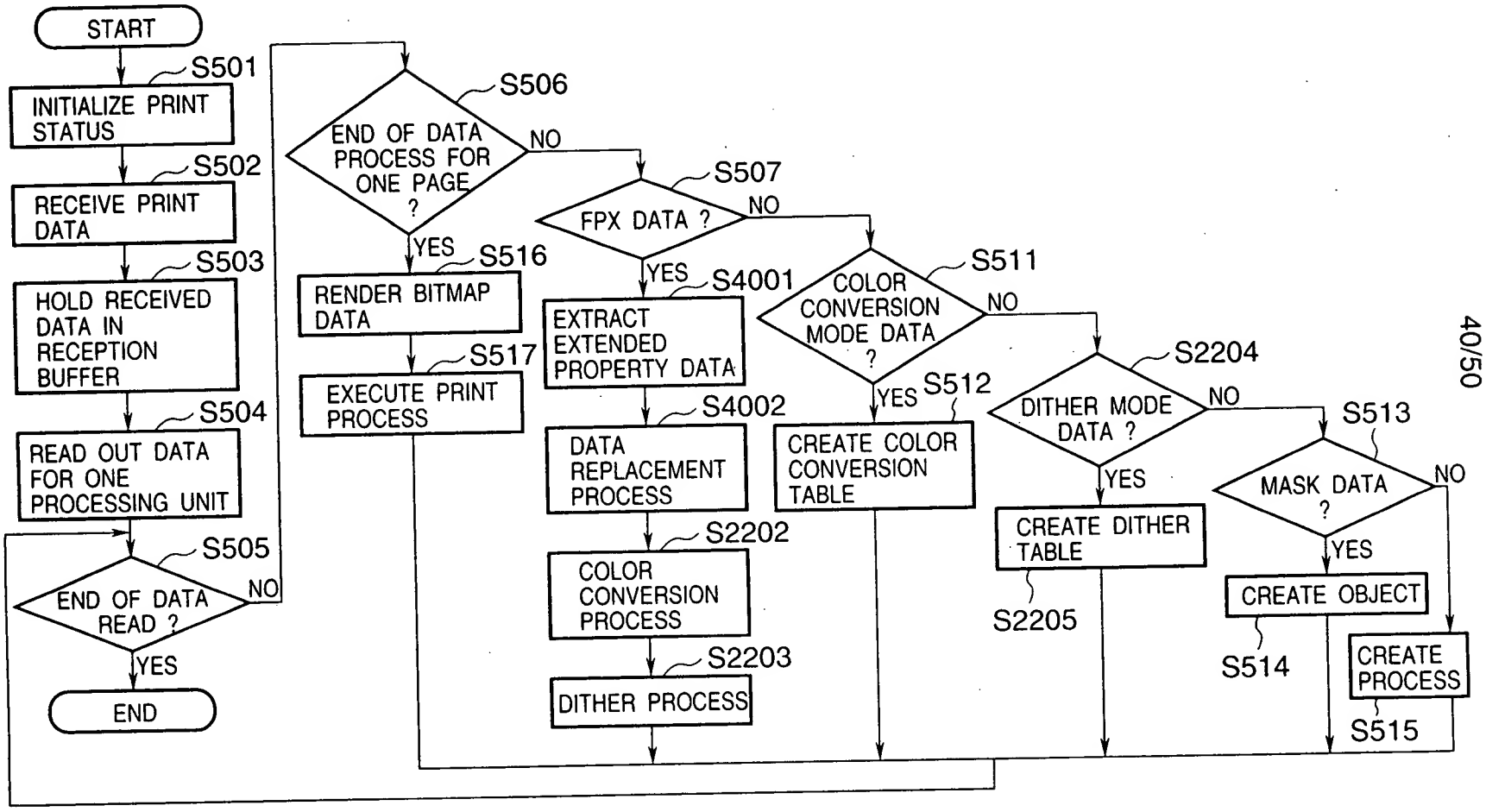

START
S501
INITIALIZE PRINT STATUS
S502
RECEIVE PRINT DATA
S503
HOLD RECEIVED DATA IN RECEPTION BUFFER
S504
READ OUT DATA FOR ONE PROCESSING UNIT
S505
END OF DATA READ ?
NO
YES
END
S506
END OF DATA PROCESS FOR ONE PAGE ?
NO
YES
S516
RENDER BITMAP DATA
S517
EXECUTE PRINT PROCESS
S507
FPX DATA ?
NO
YES
S4001
EXTRACT EXTENDED PROPERTY DATA
S4002
DATA REPLACEMENT PROCESS
S2202
COLOR CONVERSION PROCESS
S2203
DITHER PROCESS
S511
COLOR CONVERSION MODE DATA ?
NO
YES
S512
CREATE COLOR CONVERSION TABLE
S2204
DITHER MODE DATA ?
NO
YES
CREATE DITHER TABLE
S2205
S513
MASK DATA ?
NO
YES
CREATE OBJECT
S514
CREATE PROCESS
S515

FIG. 41

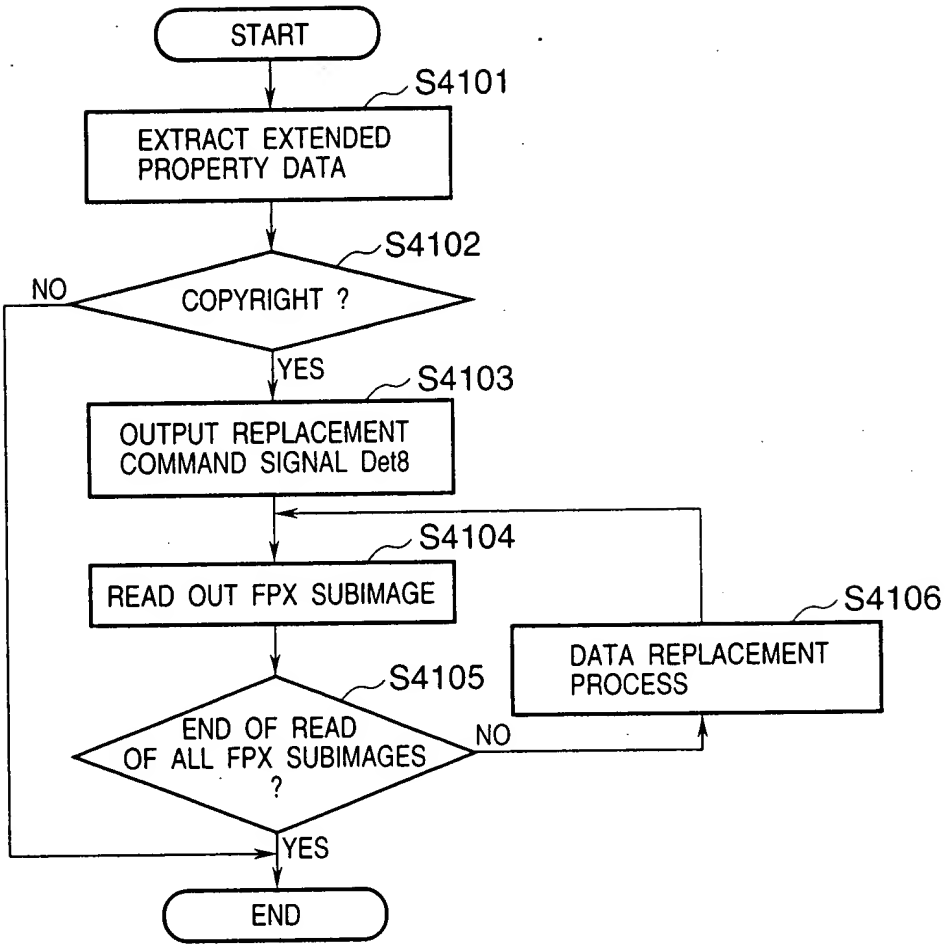

START
S4101
EXTRACT EXTENDED PROPERTY DATA
S4102
COPYRIGHT ?
NO
YES
S4103
OUTPUT REPLACEMENT COMMAND SIGNAL Det8
S4104
READ OUT FPX SUBIMAGE
S4106
DATA REPLACEMENT PROCESS
S4105
END OF READ OF ALL FPX SUBIMAGES ?
NO
YES
END

FIG. 42

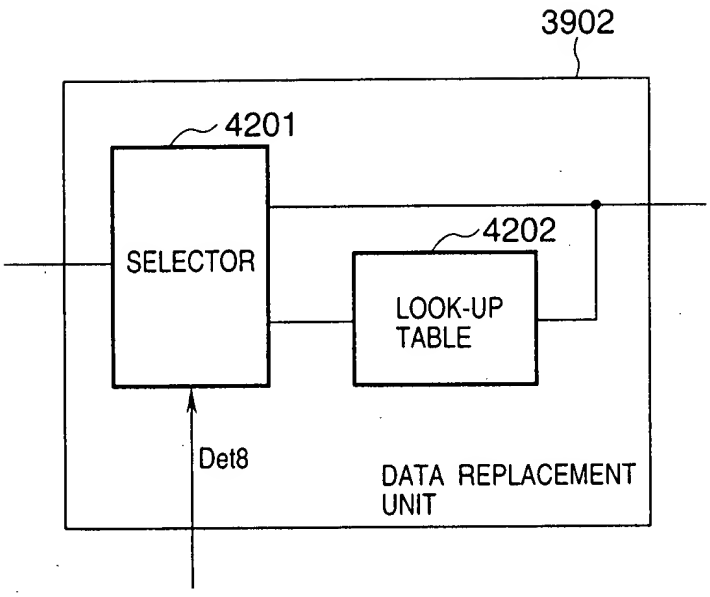

3902
4201
SELECTOR
4202
LOOK-UP TABLE
Det8
DATA REPLACEMENT UNIT

FIG. 43

INPUT	OUTPUT
0	255
1	254
2	253
3	252
4	251
5	250
6	249
249	6
250	5
251	4
252	3
253	2
254	1
255	0

FIG. 44

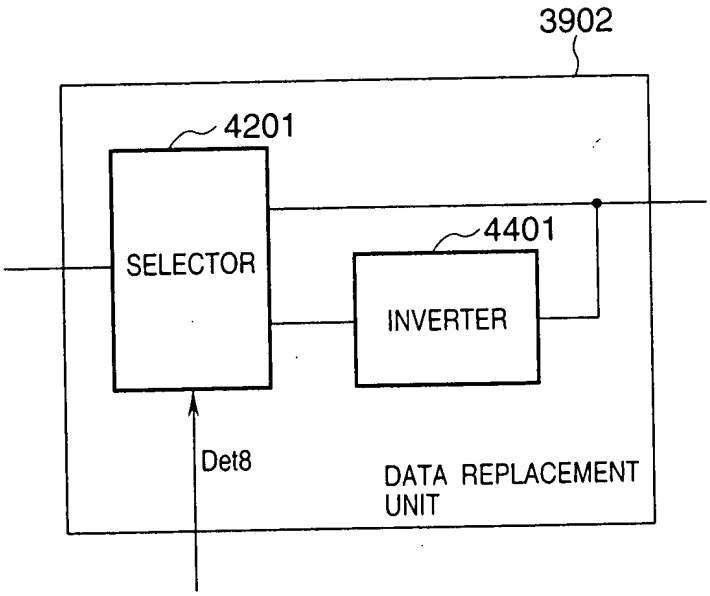

3902
4201
SELECTOR
4401
INVERTER
Det8
DATA REPLACEMENT UNIT

FIG. 45

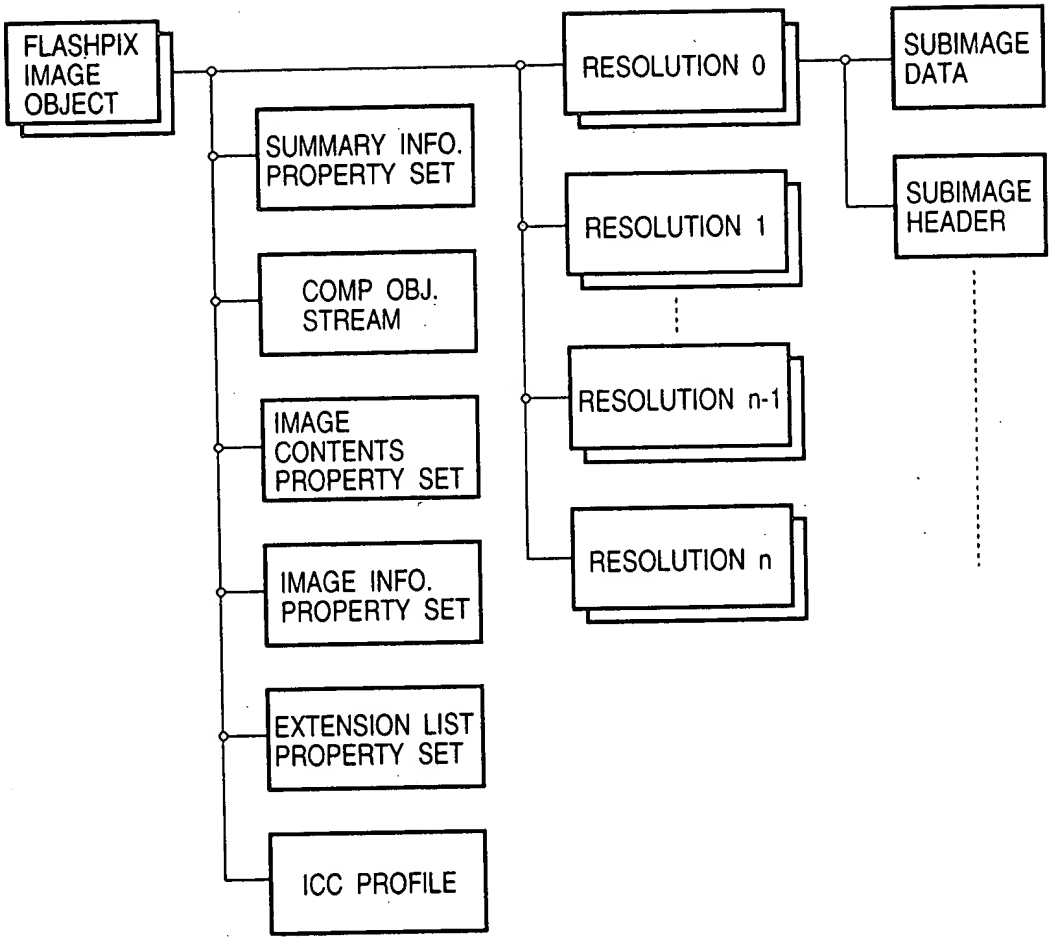

FLASHPIX IMAGE OBJECT
SUMMARY INFO. PROPERTY SET
COMP OBJ. STREAM
IMAGE CONTENTS PROPERTY SET
IMAGE INFO. PROPERTY SET
EXTENSION LIST PROPERTY SET
ICC PROFILE
RESOLUTION 0
RESOLUTION 1
RESOLUTION n-1
RESOLUTION n
SUBIMAGE DATA
SUBIMAGE HEADER

FIG. 46

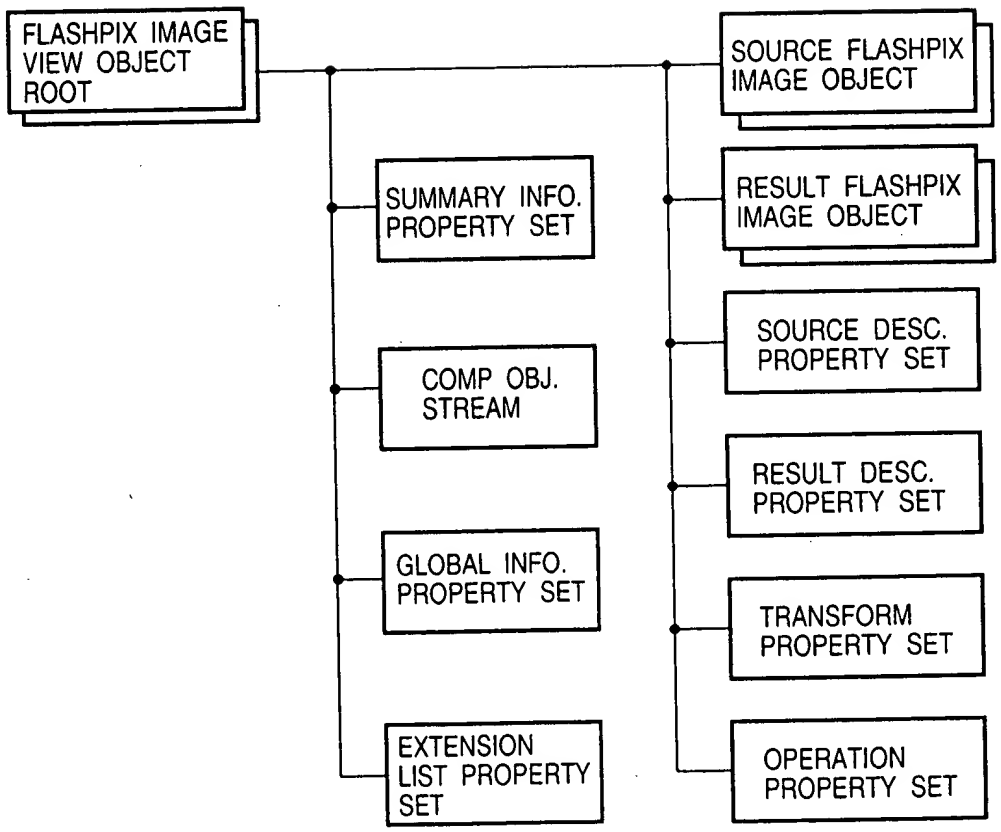

FLASHPIX IMAGE VIEW OBJECT ROOT
SUMMARY INFO. PROPERTY SET
COMP OBJ. STREAM
GLOBAL INFO. PROPERTY SET
EXTENSION LIST PROPERTY SET
SOURCE FLASHPIX IMAGE OBJECT
RESULT FLASHPIX IMAGE OBJECT
SOURCE DESC. PROPERTY SET
RESULT DESC. PROPERTY SET
TRANSFORM PROPERTY SET
OPERATION PROPERTY SET

FIG. 47

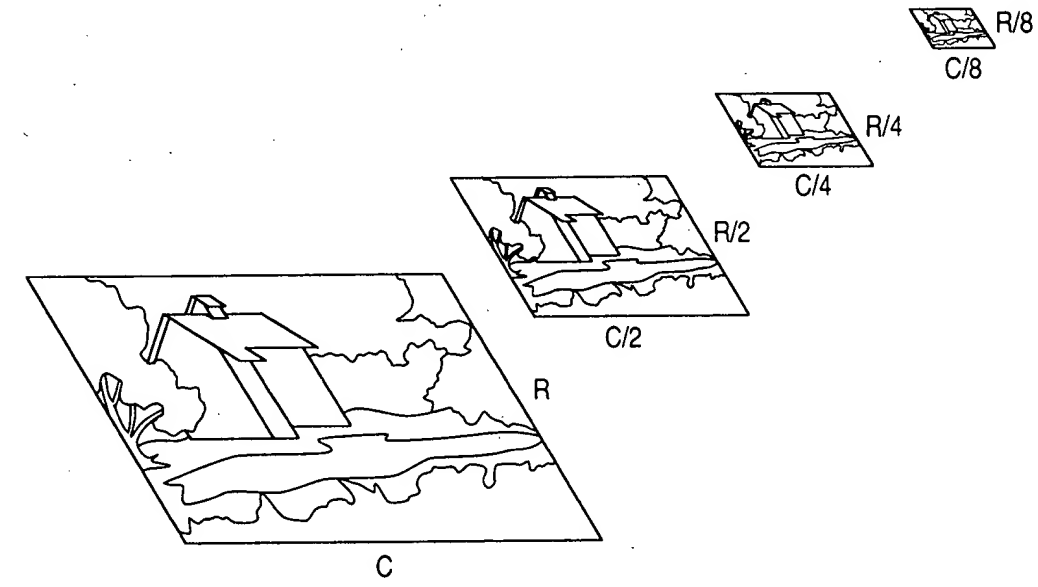


FIG. 48

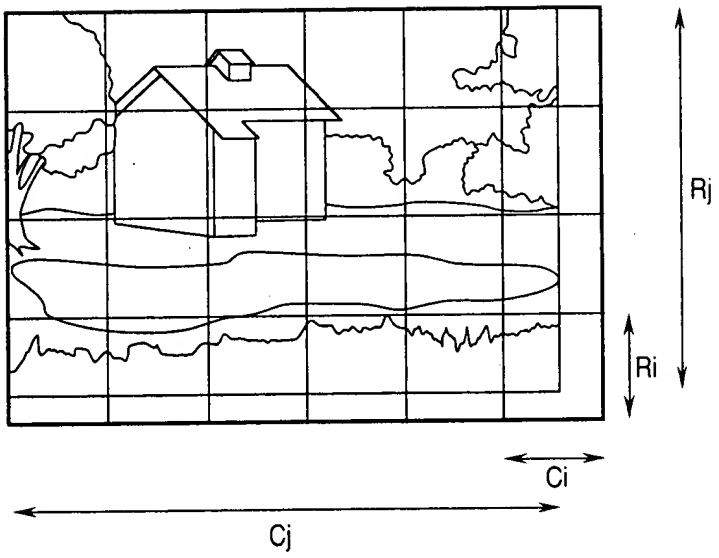


FIG. 49

PROPERTY NAME	ID CODE	TYPE
NUMBER OF RESOLUTIONS	0x01000000	VT_UI4
HIGHEST RESOLUTION WIDTH	0x01000002	VT_UI4
HIGHEST RESOLUTION HEIGHT	0x01000003	VT_UI4
DEFAULT DISPLAY HEIGHT	0x01000004	VT_R4
DEFAULT DISPLAY WIDTH	0x01000005	VT_R4
DISPLAY HEIGHT/WIDTH UNITS	0x01000006	VT_UI4

PROPERTY NAME	ID CODE	TYPE
SUBIMAGE WIDTH	0x02ij0000	VT_UI4
SUBIMAGE HEIGHT	0x02ij0001	VT_UI4
SUBIMAGE COLOR	0x02ij0002	VT_BLOB
SUBIMAGE NUMERICAL FORMAT	0x02ij0003	VT_UI4 | VT_VECTOR
DECIMATION METHOD	0x02ij0004	VT_I4
DECIMATION PREFILTER WIDTH	0x02ij0005	VT_R4
SUBIMAGE ICC PROFILE	0x02ij007	VT_UI2 | VT_VECTOR

PROPERTY NAME	ID CODE	TYPE
JPEG TABLES	0x03ij0001	VT_BLOB
MAXIMUM JPEG TABLE INDEX	0x03000002	VT_UI4

FIG. 50

FIELD NAME	LENGTH	BYTE(S)
LENGTH OF HEADER STREAM HEADER	4	0-3
IMAGE WIDTH	4	4-7
IMAGE HEIGHT	4	8-11
NUMBER OF TILES	4	12-15
TILE WIDTH	4	16-19
TILE HEIGHT	4	20-23
NUMBER OF CHANNELS	4	24-27
OFFSET TO TILE HEADER TABLE	4	28-31
LENGTH OF TILE HEADER ENTRY	4	32-35
TILE HEADER TABLE	VARIABLE	VARIABLE

FIG. 51

IMAGE HEADER FIELD	IMAGE FORMAT IDENTIFIER
	FILE SIZE
	NUMBER OF X-PIXELS (WIDTH)
	NUMBER OF Y-PIXELS (HEIGHT)
	DEPTH SIZE
	PRESENCE/ABSENCE OF COMPRESSION
	RESOLUTION
	OFFSET TO BITMAP
	COLOR PALLET SIZE
	COLOR PALLET DATA
IMAGE DATA FIELD	BIT MAP